Users Guide

Version 5.1.12

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WP

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SEP - Subscription Based Software
Kaspersky -- KAV_Engine-5.5.4.34

For EFX 2.0 and higher:

junit, jfree, apache commons (beanutils, lang, logging, net, poi, collections, codec), jfreereport, monarch date, trove4j, jgoodies, mindprod, postgresql

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Preface

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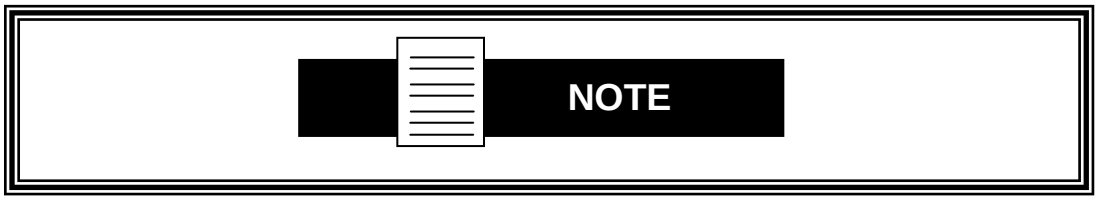
This manual provides installation, administration and operation information for the Deepnines Security Edge Platform (SEP). This is a technical document intended for use by technical support, technicians and operators responsible for the operation and maintenance of the SEP.

Note



A note icon identifies information for the proper operation of SEP, including helpful hints, shortcuts, or important reminders.

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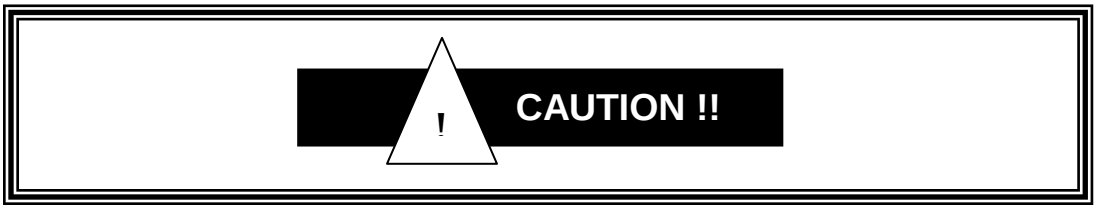

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Record of Revisions

Revision Level	Date	Reason for Change
5.1	11-17-07	Preliminary Release
5.1.0 - b469	1/25/08	Revision 1
5.1.2 - 505	4/10/08	Revision 1

Comments or Suggestions Concerning this Manual

Comments or suggestions regarding the content and design of this manual are appreciated. To submit comments, please contact the Deepnines Inc., Technical Publications or Technical Support Department via email at support@deepnines.com. See Chapter 7, "Technical Support/Additional Resources "

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Introduction

1

1.1 Overview of the Security Edge Platform (SEP)

The Security Edge Platform (SEP) is a unified threat management (UTM) and policy enforcement appliance that is deployed at the edge or at critical points in the network architecture and acts as the first line of defense for the network. The SEP evaluates all network traffic at the packet level, both ingress and egress, to determine what is valid and what is malicious. The SEPs patent-pending technology is behavior and signature-based in order to mitigate both known and unknown attacks.

There are two different types of SEP devices; Frontline™ and Edge™ (Figure 1-1). The functionality is identical on both, but there is one major difference between the two devices. The Edge device is placed outside or in front of your router, taking the connection from your ISP. The Frontline device is for LAN deployments on Ethernet or Gigabit Fiber connections. Both devices contain 3 interfaces; an interface for outside traffic, an interface for inside traffic, and an interface for the management console to connect to. The SEP operates completely invisible to the network. The outside and inside interface contains neither IP address nor a MAC address.

The SEP components can be one or two security edge appliances using the SEP to monitor and control the flow of traffic in and out of the network. Optionally, an Edge ForensiX (EFX) system can be used to store network traffic information in a database for historical analysis.

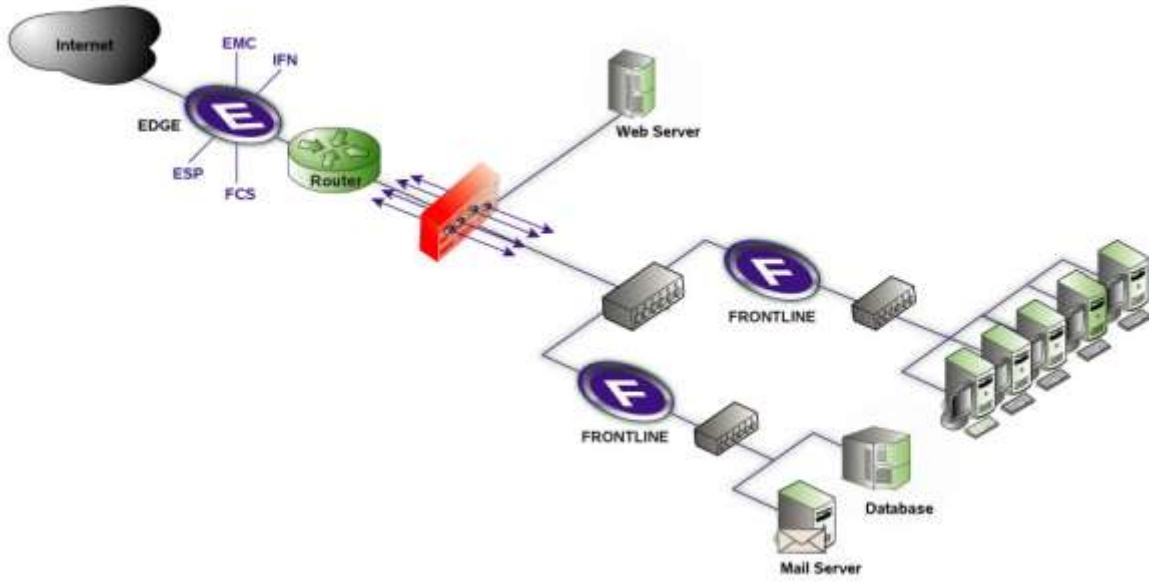


Figure 1-1. Edge and Frontline Security Edge Platforms

Installation Requirements

2

2.1 Installing the Security Edge Platform (SEP) Operating System

Prior to installing the Security Edge Platform (SEP) Operating System (OS), ensure that the following minimum configuration on your computer system includes:

- Dual Processor CPU (2 Dual-Core CPUs recommended)
- 2 GB RAM minimum, 4 GB RAM recommended (over 4 GB not currently used)
- 36 GB disk storage minimum, 72 GB recommended

Perform the following steps to install a new Security Edge Platform (SEP) Operating System (OS):

1. Insert the D9BaseOS CD in the CDROM drive and reboot your system. The box will boot from the CD. A boot prompt appears (Figure 2-1).

NOTE

Ensure your computer system is configured to boot from CD.

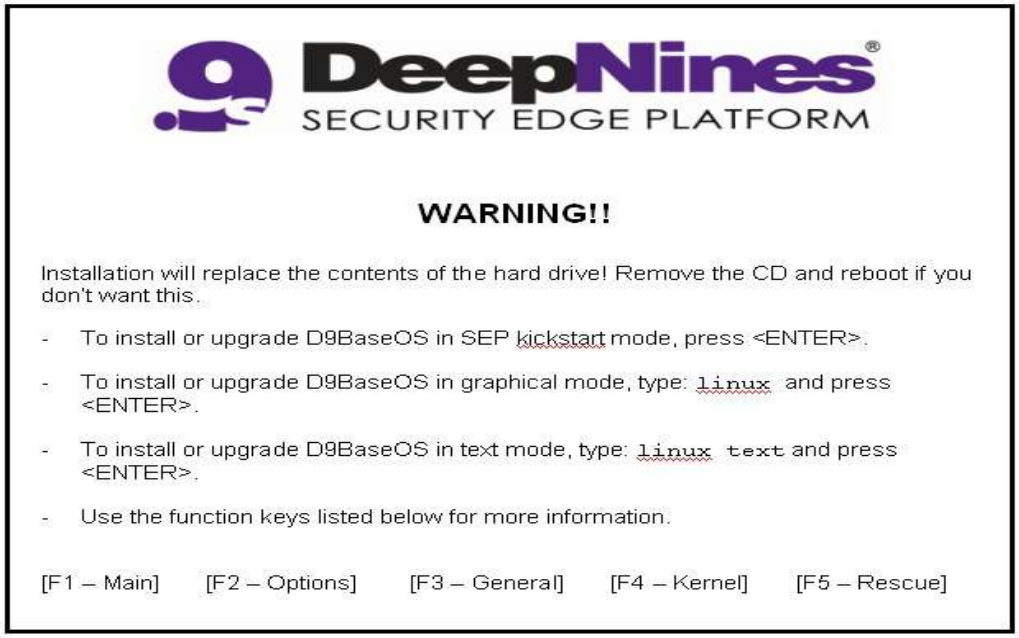

DeepNines
SECURITY EDGE PLATFORM
WARNING!!
Installation will replace the contents of the hard drive! Remove the CD and reboot if you don't want this.
- To install or upgrade D9BaseOS in SEP kickstart mode, press <ENTER>.
- To install or upgrade D9BaseOS in graphical mode, type: linux and press <ENTER>.
- To install or upgrade D9BaseOS in text mode, type: linux text and press <ENTER>.
- Use the function keys listed below for more information.
[F1 – Main] [F2 – Options] [F3 – General] [F4 – Kernel] [F5 – Rescue]

Figure 2-1. SEP Warning Screen

2. Select one of the following options. For standard installation of the D9BaseOS in SEP kickstart mode, press **<ENTER>**.

The installation process begins and will take approximately 2-4 minutes to complete. The license agreement appears and you are prompted with the following:

```
Do you accept license term? (Y/N):

Enter Hostname: (Enter your host name)

Enter Domain Name: (Enter your domain name)

Enter Admin NIC IP Address: (Enter the IP address of the
admin port of the SEP)

Enter Admin NIC IP Netmask:

Enter the Gateway Routers IP Address:

Enter the DNS Server IP Address:

Enter the Secondary DNS IP Address:

Save Above Configuration (Y/N)?
```

Once you verify and save the configuration, the Root Password screen appears as shown in Figure 2-2.

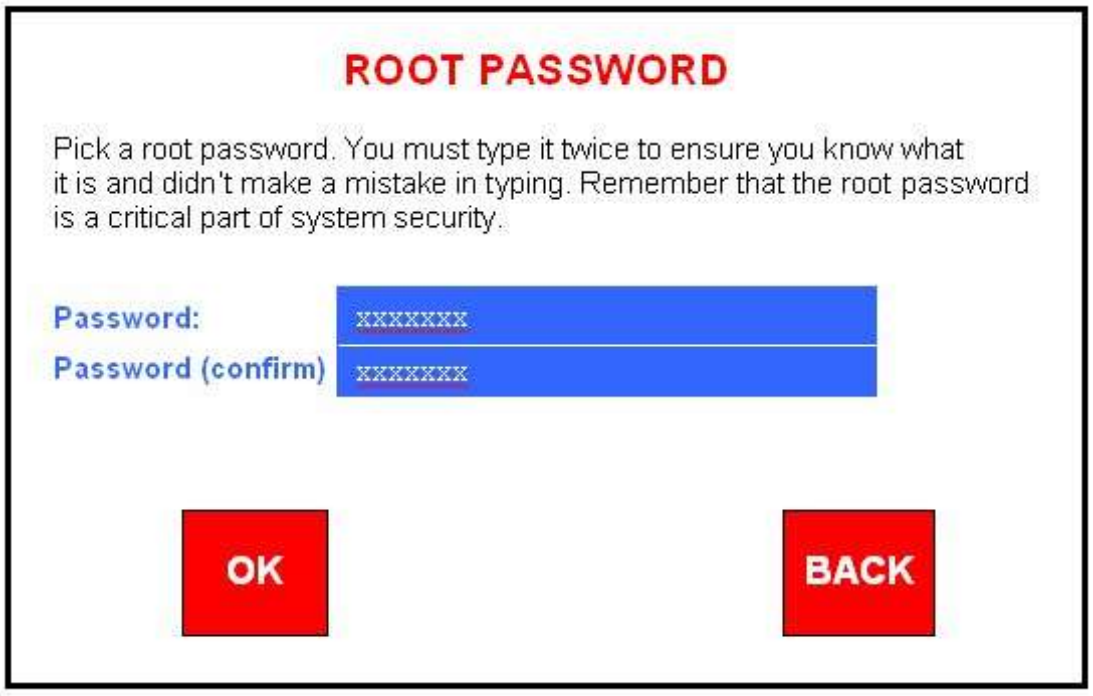

ROOT PASSWORD
Pick a root password. You must type it twice to ensure you know what it is and didn't make a mistake in typing. Remember that the root password is a critical part of system security.
Password:
xxxxxxxx
Password (confirm)
xxxxxxxx
OK
BACK

Fig 2-2. Root Password Screen

3. Enter password twice for Linux root account and click **<OK>**.

The reformatting of the disk drive and package installation occurs and will take several minutes to complete. Once installation is complete, the system will reboot. You will need to verify that system is complete and can accomplish this by performing the following:

4. At the command prompt, type the following:

```
>Login: root
>Password: xxxxxxxx
>Ping xx.x.xxx.xx (IP address of primary DNS server)
```

A ping is a computer network tool to test whether your host is reachable across the IP network. It will send echo requests to your host (your primary DNS server) and listen for an echo response (replies). If successful, you will receive bytes of data back from the DNS server. When complete, a statistical summary is printed. This process will ensure that your system is responding.

There are several components that can be utilized that perform various functions within SEP. A key component is the Edge Management Console (EMC) and you will need to launch this application when the Security Edge Platform (SEP) Operating System (OS) is installed on your server. Chapter 3, *"Edge Management Console (EMC)"* describes the procedures for launching the EMC Console.

When upgrading your SEP, ensure that you are not connected to or running the SEP. Your system monitor may show incorrect version number when attempting to upgrade your SEP while connected.

Edge Management Console (EMC)

3

3.1 Overview of the Edge Management Console (EMC)

The EMC provides graphical views of the network traffic and the operating condition of he SEP and is used to configure and control Security Edge Platforms. You can monitor and configure multiple Security Edge Platforms from a single EMC installation, as long as the workstation on which the EMC is installed shares the SEP private network. Up to 32 EMCs can log into and monitor a single SEP.

3.2 Installing the EMC

The Enterprise Management Console (EMC) used to manage any single or multiple SEPs should be from the latest version of the SEP. This is because the messaging system used to communicate between the SEP and EMC must be compatible. All new versions of EMC should be compatible with older supported SEPs but not the other way around. The new EMC will work on older versions of the SEP but older versions of the EMC will not work on newer versions of the SEP. Perform the following steps to download and install the latest revision (highest build number) of SEP:

1. scp root@<ip-of-sep>:/opt/s9_post_install/pkg/HMC_FCSUI_v5.0.3.zip
2. unzip HMC_FCSUI_v5.0.3.zip
3. /hmc &

Note: The latest HMC_FCSUI_*.zip file will only be available from the SEP from the last BaseOS install.

3.3 Launching the EMC

Dependent on your operating system, perform the following procedures for launching EMC:

For Windows Operating System:

1. Open Windows Explorer and navigate to the directory where EMC is installed.
2. Double-click on emc.bat

For Unix or Linux Operating System:

1. Navigate to the directory in which the EMC is installed.
2. Execute ./emc

For MAC OS X Operating System:

1. Double click on the jar file or run the EMC shell file by double clicking it in the Finder.

If you were logged in to any SEP hosts when you last exited the EMC, you are prompted to log in to those same hosts when the EMC launches. If you have not been prompted to log in, or this is your first time logging in, the following screen (Figure 3-1) appears once you execute EMC.

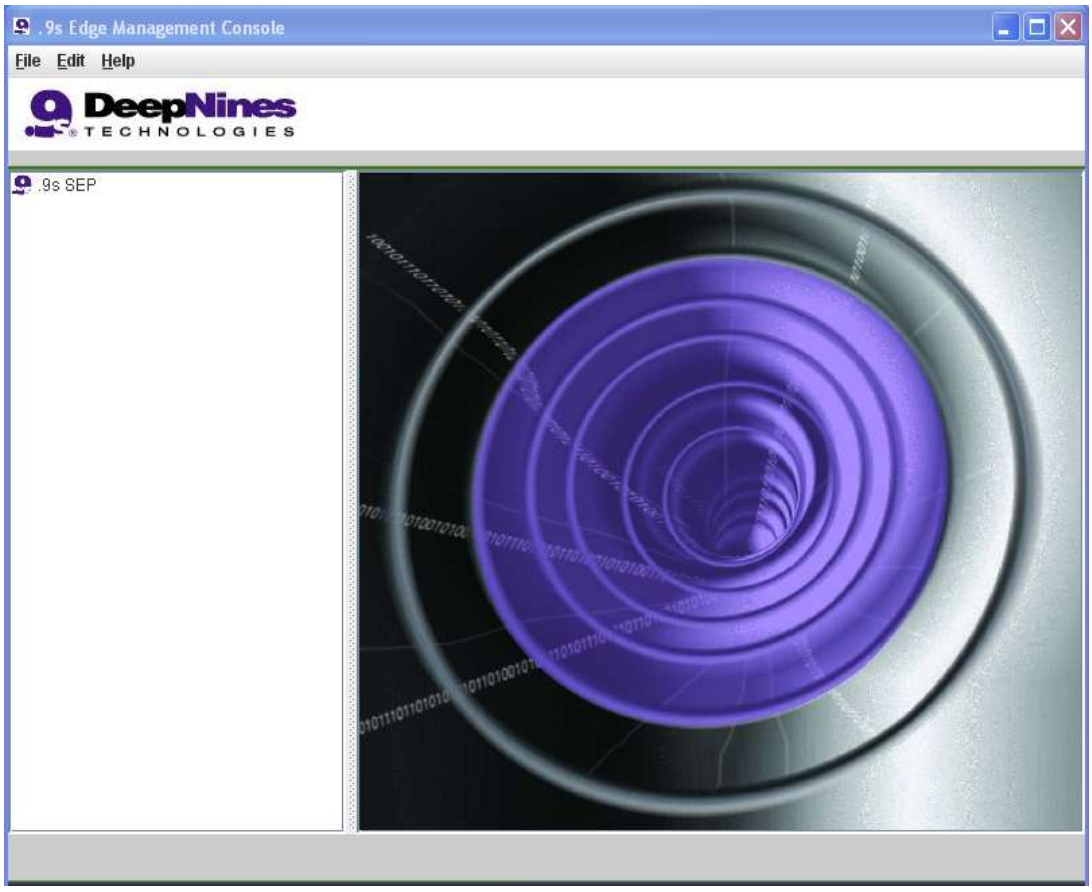


Figure 3-1. EMC Main Menu Screen

3.3.1 Logging in to EMC

1. Click **File>Login** (Figure 3-2)
2. Enter Hostname or the IP address of the SEP administrative interface to access (Figure 3-3).
3. Enter your administrative TCP port of 9099.
4. Enter your SEP administrator user ID. (The default User ID is **Sleuth9**
5. Enter your administrator password. (The default password is **godeep9s**)
6. Click **<OK>**.

Figure 3-2. EMC Main Menu Screen

Once you log in, the Connect Host dialog opens as shown in Figure 3-3. Enter your Host, Port, Username and Password and click **<OK>**. The password should be at least 8 characters long and contain at least 2 alphanumeric and 1 numeric characters.

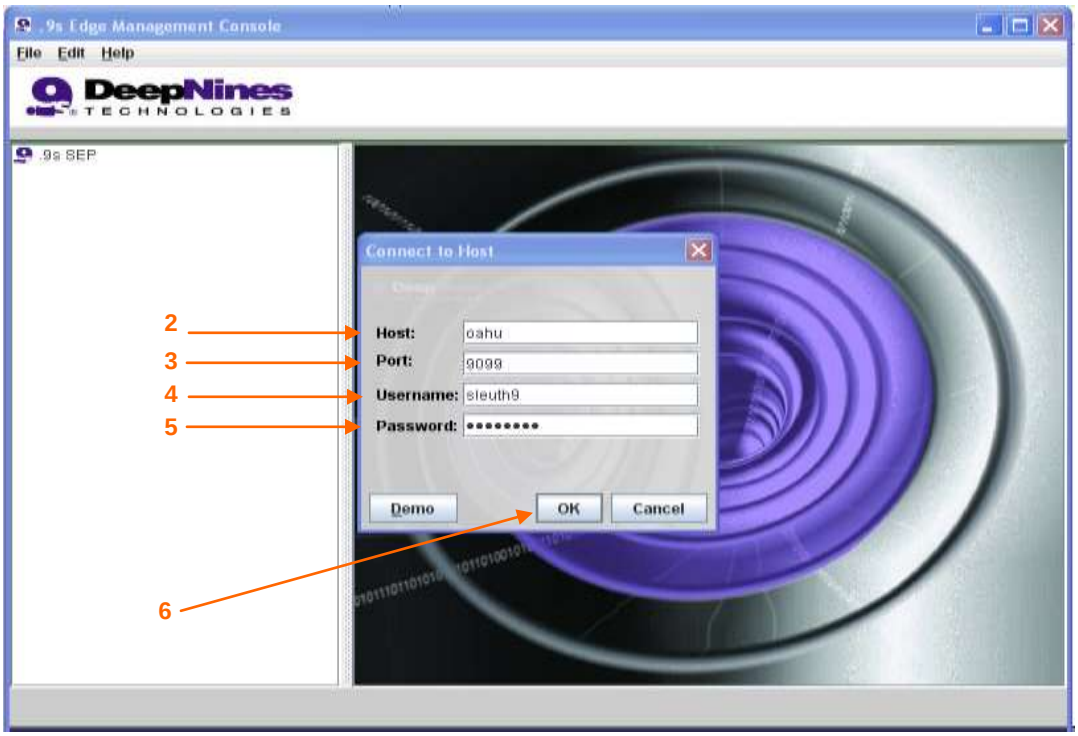


Figure 3-3. EMC Main Menu Logon Screen

The first time you log in to EMC, the following screen appears (Figure 3-4). You will need to obtain a license before you can access or configure any of the available options for the SEP. Refer to Chapter 4, *"License Setup"* that describes the license setup for the SEP platform.

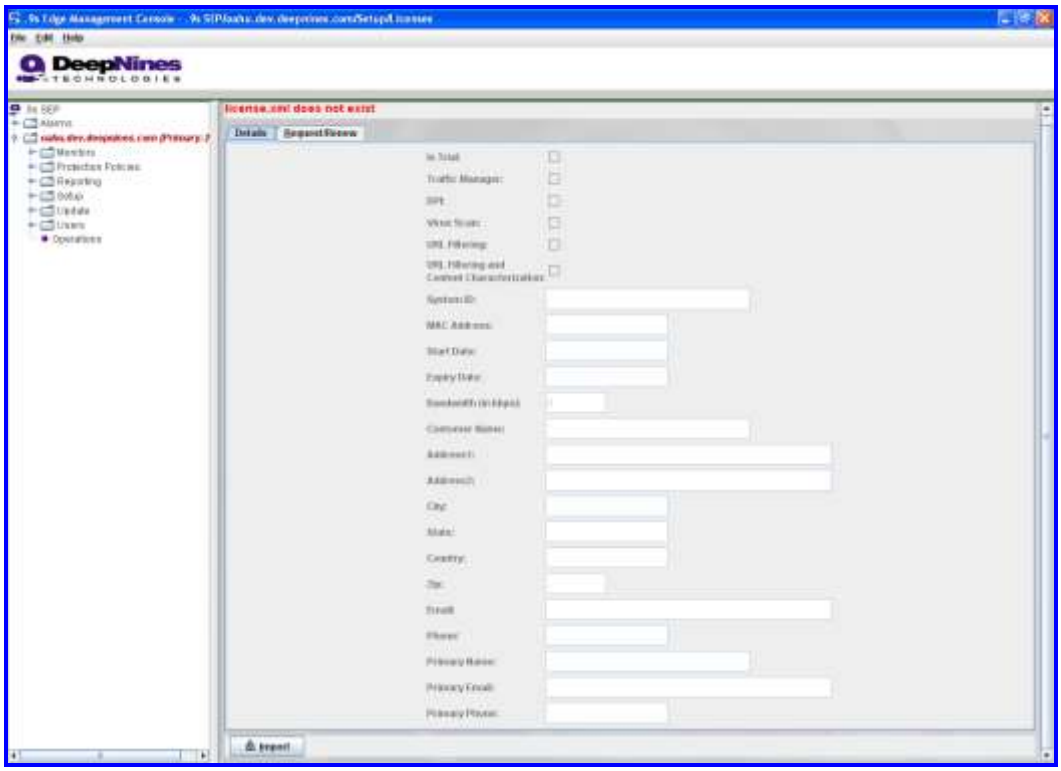


Figure 3-4. License Details Screen

3.4 EMC Console Main Window

The EMC Console Main window contains 2 panes. The Command Explorer pane (tree window) on the left allows you to expand folder icons to select informational and configurable settings that are displayed on the Action Pane on the right. You can expand the folder icons to reveal other folders and commands by clicking the symbol next to the connected platform (Figure 3-5).

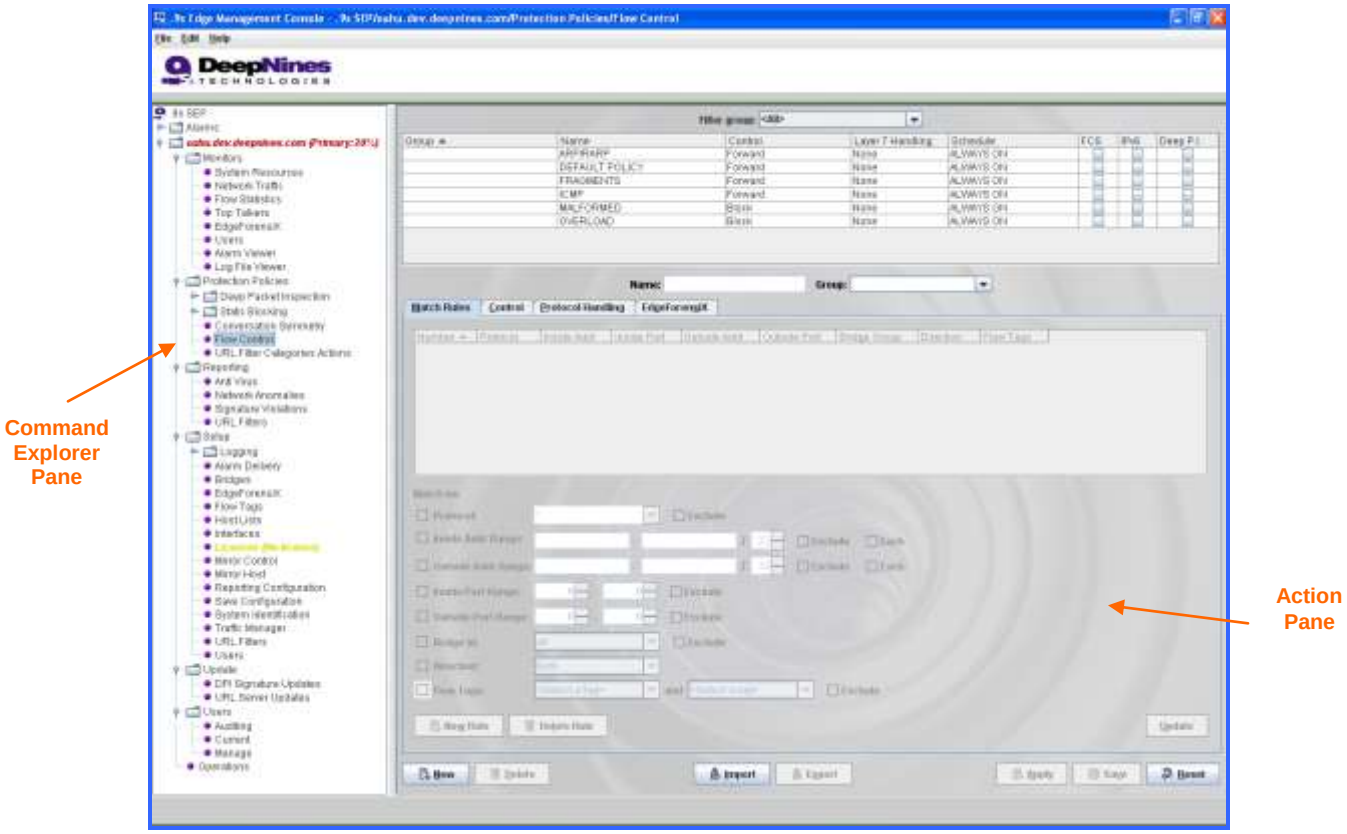


Figure 3-5. EMC Console Main Window

The Command Explorer pane is organized hierarchically. Table 3-1 describes each of the folders functionality.

Monitors	Provides graphical representations of SEP operations for your review.
Protection Policies	Provides configuration options for Static Blocking, Conversation Symmetry, and Flow Control.
Reporting	Allows for generation of reports from AV, Network Anomalies and Deep Packet Inspection events.
Setup	Provides configuration and setup options for the active SEP unit.
Update	Allows for special configuration of Anti Virus update sites, Surf Control updates and configuration/query of updated DPI Signatures.
Users	Provides configuration and management options for users.
Operations	A single panel from which SEP operations can be managed.

Table 3-1. EMC Command Explorer

3.5 Navigating the Command Explorer Pane

You can navigate the Command Explorer using the mouse or the keyboard.

To navigate the Command Explorer using the mouse:

- To open a folder, double-click the folder name, or click the handle or plus (depending on which look and feel you have selected) next to the folder icon.
- To execute a command, click the command name
- To view the health condition of a SEP host, hover the mouse pointer over the host name

To navigate the Command Explorer using the keyboard:

- To move the focus up or down the list, press the Up or Down arrow keys
- To open a folder, press the Right arrow key; to close a folder, press the Left arrow key
- To execute a command, press Enter or Return

Executing a command in the Command Explorer pane displays information or provides input fields related to the current selection in the Action pane.

Table 3-2 describes each of the options available within the EMC Console.

Menu	Option	Description
File	Login	Allows you to log in to a SEP server.
	Logout	Allows you to log out of a SEP server.
	Exit	Closes the SEP EMC and logs out of hosts
Edit Preferences	Clear Host History	Clears the host history list from the File menu
	Save Last Location	Remembers the last panel you accessed and returns to it when you log back in to the GUI.
	Set Look and Feel	Provides options for changing the appearance of the SEP EMC.
	Show Tree Lines	Toggles display of guidelines in the Command Explorer pane on and off.
Help	About	Displays version and copyright information for SEP.
Status Line		The status line at the bottom of the EMC screen displays system messages.
Alarms		Allows you to view a list of recent alarms generated by all the SEP hosts to which the EMC is connected.

Table 3-2. EMC Console Options

3.6 EMC Version Number

The EMC version number is used to verify consistency between the management console and the SEP platforms in the network. Each SEP platform and corresponding EMC must use the exact same system version. This is required for proper connectivity and will be necessary to avoid any connectivity issues.

To View EMC Version:

1. Select Help >About

The About Information panel is displayed showing the current EMC version number. The version must match the SEP platform. Matching the build number is also recommended.

License Setup

4

4.1 Overview

SEP licensing configuration options allow you to modify licensing information. You can renew or extend your SEP license or request a new SEP license by completing the fields supplied in the menu and you will receive new information from Deepnines support. If you are logging in to the SEP EMC console for the first time, you will receive a message on the top left corner of the screen showing *"license.xml does not exist".*

4.2 Obtaining Your License

1. Click on the Request/Renew tab as shown on the Details screen in Figure. 4-1 to bring up the SMTP Server Information screen as shown on Figure 4.2. Refer to Table 4-1 for Request/Renew menu fields.

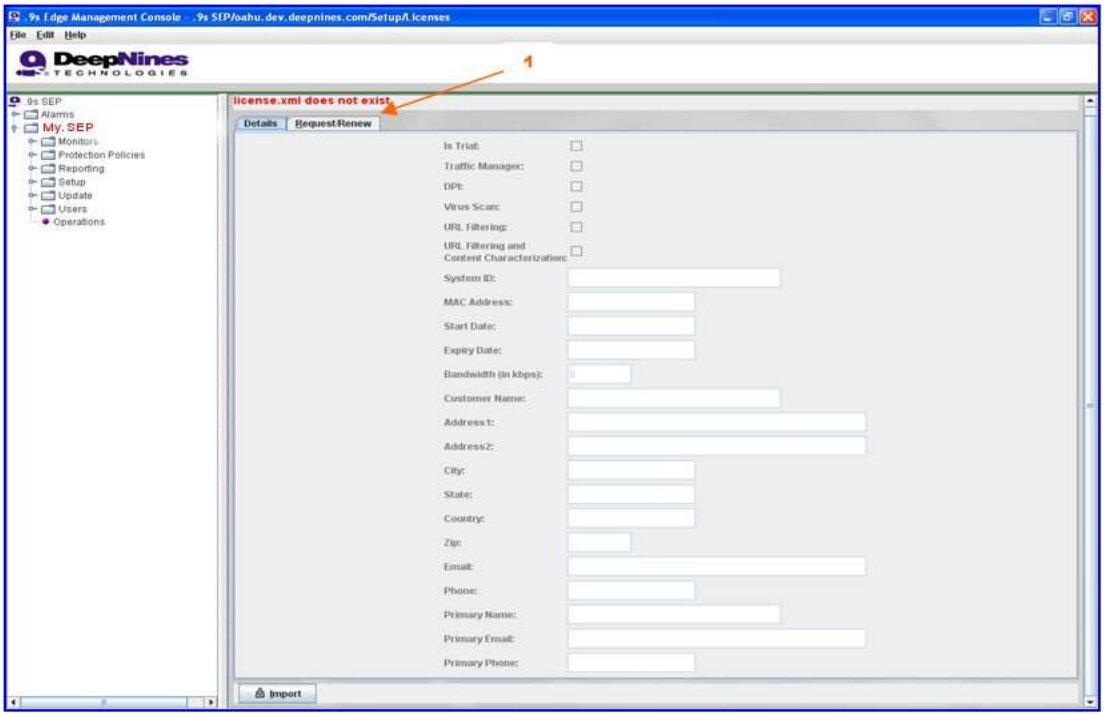


Figure 4-1. License Detail Screen

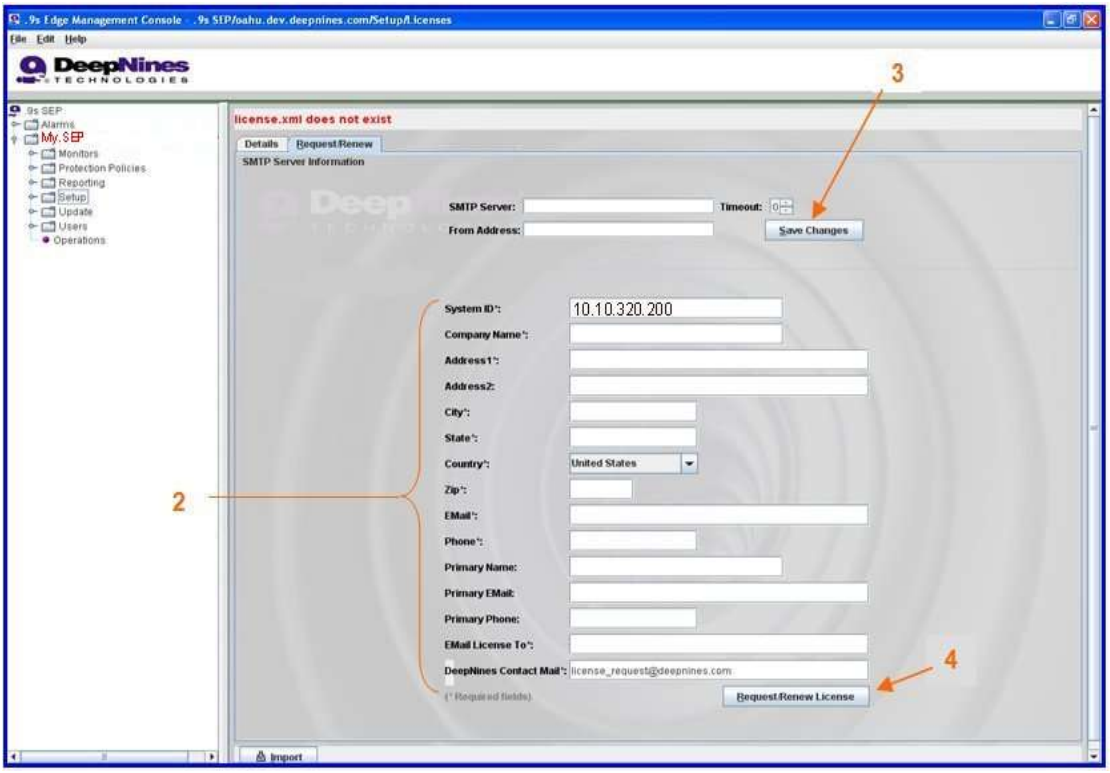


Figure 4.2. Request/Renew Menu Screen

Request/Renew Menu Fields	
SMTP Server	IP address of mail server
Timeout	Indicates amount of seconds before server times out. Leave at default.
From Address	Your email address that identifies the SEP (Server)
System ID	Populated system ID field
Company Name	Your company name
Address 1	Your address
Address 2	Your address
City	Your city
State	Your state
Country	Select country from pull-down menu
Zip	Your zip code
Email	Your email address
Phone	Your telephone
Primary Name	Your name
Primary Email	Your primary email address
Primary Phone	Your primary telephone number
Email License To	Client email address (identifies admin who will maintain the SEP
Deepnines Contact Mail	Populated with Deepnines contact email

Table 4-1. Request/Renew Menu Fields

2. Input data in all fields of the Request/Renew screen. (System ID is already populated with your System ID)
3. Click **<SAVE CHANGES>**.
4. Click **<REQUEST/RENEW LICENSE>**.

Deepnines support will receive your request via email and review all information. Deepnines support processes information and emails you with an attached file that contains relevant license information. Open this file attachment and save it on your computer.

5. Click the **<Import>** tab. A window appears requesting file to be imported.
6. Enter the file name of the file attachment you saved on your computer and click **OK**.

Your license has been activated and you can monitor and configure the Security Edge Platform from your EMC. Refer to Chapter 6, *"SEP Resources"* *that describe the* license setup for the SEP platform.

Configuring SEP

5

5.1 Overview

You can view complete system health information of the SEP by viewing the System Resources and Network Traffic displays. These are contained in the Monitors section of the Command Explorer and provide a graphical representation of the health of your system. The System Resource monitor displays link status, engine status, fail-over state, suspicious or bad file modes, CPU, disk and memory utilization, as well as packet per second, interrupts per second, last update and system uptime. The Network Traffic monitor displays the aggregate traffic traversing the SEP both inbound and outbound. For more detailed information on these displays, refer to Section 6.2, “Monitors” in this manual.

Although the SEP Traffic manager contains variables that are set by Deepnines for optimal performance, there may be certain conditions where changes or adjustments need to be made by you for the respective network. This section covers how-to instructions for setting up and configuring SEP functions.

5.2 How to Setup Email Anti-Virus Scanning

The most common way to receive a virus is through an infected email. There area anti-virus software programs that attempt to identify, thwart and eliminate computer viruses and other malicious software (malware).

Simple Mail Transfer Protocol (SMTP) and Post Office Protocol version 3 (POP3) are the de facto standards for email transmissions across the Internet using TCP/IP connections. Many subscribers to individual Internet service provider email accounts access their email with client software that uses SMTP or POP3. You can easily setup anti-virus scanning by configuring the flow control for SMTP and POP3 email. Perform the following procedures below. For additional information on Flow Control, refer to Section 6.3.4, “Flow Control” in this manual.

To configure flow control for SMTP,

1. Navigate to the Protection Policy, highlight and click on Flow Control. The Flow Control screen appears (Figure 5-1).
2. Click on Match Rules tab on top row of tabs.
3. Create a new Flow Control configuration for SMTP traffic by clicking **<NEW>**.
4. Enter data for Name and Group.
5. Click and place check mark in small box next to Protocol. Click on pull-down menu to display options. Protocol = TCP(6).
6. Click and place check mark in small box next to Inside Port Range. Inside Port Range = 25-25.
7. Click and place check mark in small box next to Outside Port Range. Outside Port Range = 25-25.
8. Click and place check mark in small box next to Direction. Click on pull-down to display options. Direction = Both

9. Click on Control tab on top row of tabs.
10. Click and place check mark in small box in Conversation (Figure 5-2).
11. Select Conversations / Limit = 1000 by selecting up & down arrows.
12. Select Control only from pull-down menu.
13. Click Protocol Handling tab on top row of tabs.
14. Select Mail: SMTP button (Figure 5-3).
15. Click **<SAVE>**.

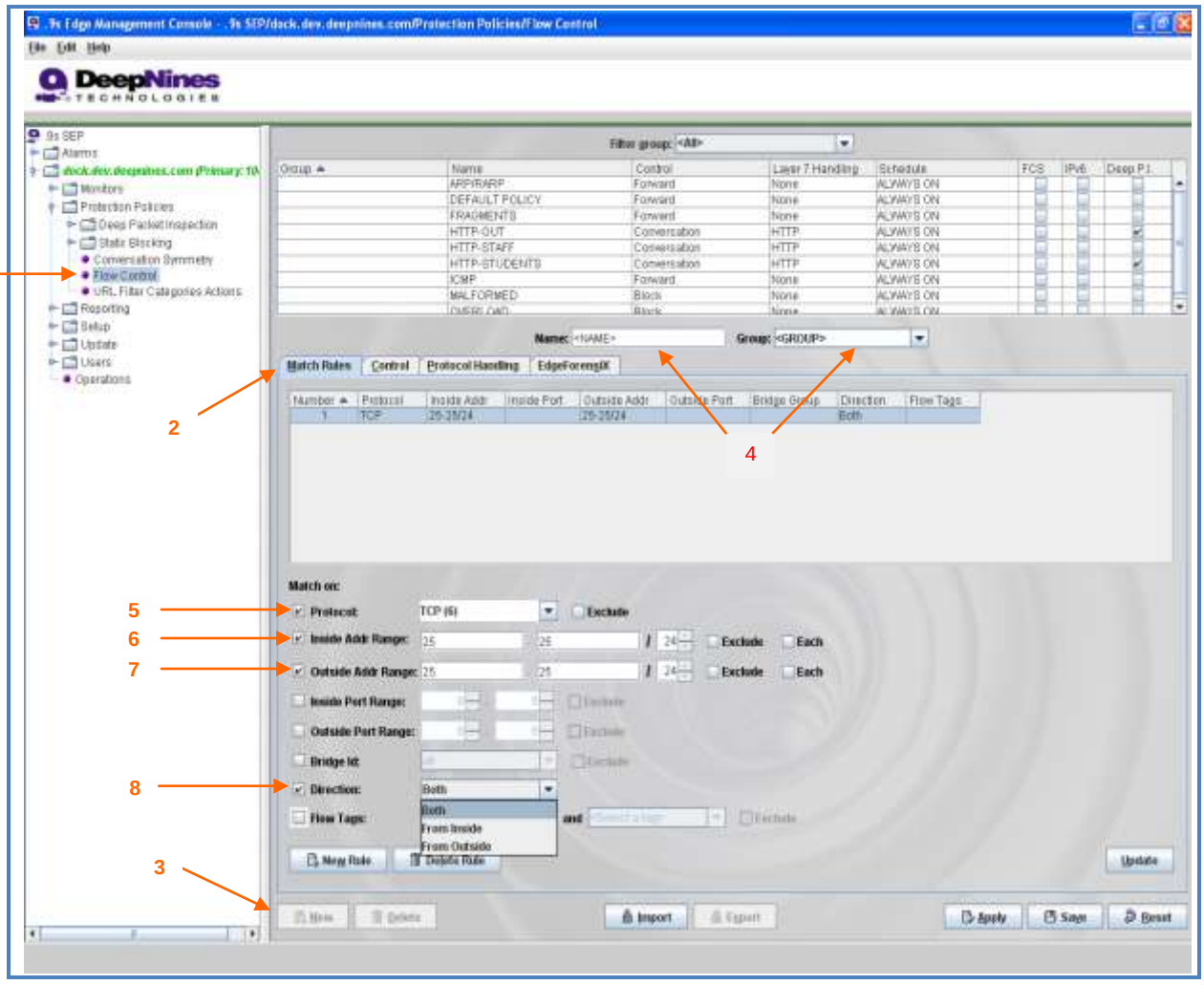


Figure 5-1. Configuring SMTP – Match Rules Screen

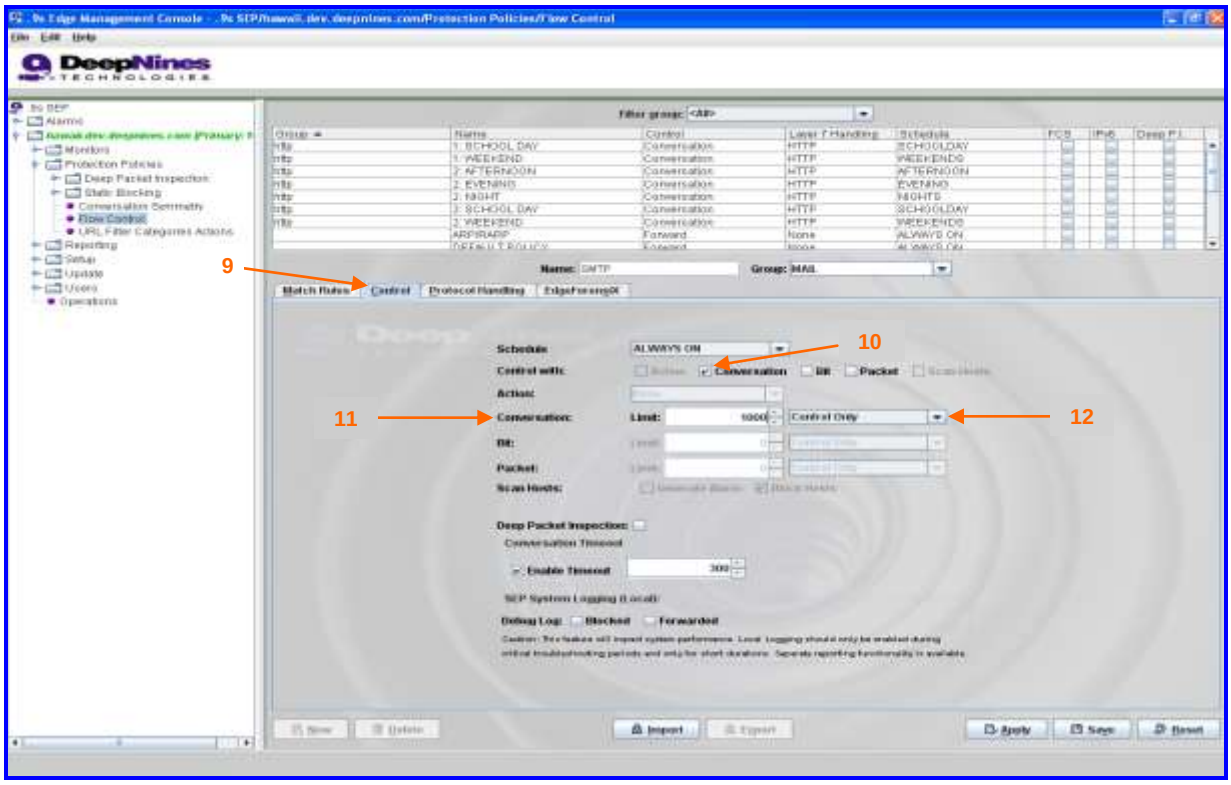


Figure 5-2. Configuring SMTP – Control Screen

Figure 5-3. Configuring SMTP – Protocol Handling Screen

To configure flow control for POP3,

1. Navigate to the Protection Policy, highlight and click on Flow Control. The Flow Control screen appears (Figure 5-4).
2. Create a new Flow Control configuration for POP3 traffic by clicking **<NEW>**.
3. Enter data for Name and Group.
4. Click on Match Rules tab on top row of tabs.
5. Click and place check mark in small box next to Protocol. Click on pull-down menu to display options. Protocol = TCP(6).
6. Click and place check mark in small box next to Inside Port Range. Inside Port Range = 110 -110.
7. Click and place check mark in small box next to Outside Port Range. Outside Port Range = 110 -110.
8. Click and place check mark in small box next to Direction. Click on pull-down to display options. Direction = Both
9. Click on Control tab on top row of tabs.
10. Click and place check mark in small box in Conversation (Figure 5-5).
11. Select Conversations / Limit = 1000 by selecting up & down arrows.
12. Select Control Only from pull-down menu.
13. Click Protocol Handling tab on top row of tabs.
14. Select Mail: POP3 button (Figure 5-6).
15. Click **<SAVE>**.

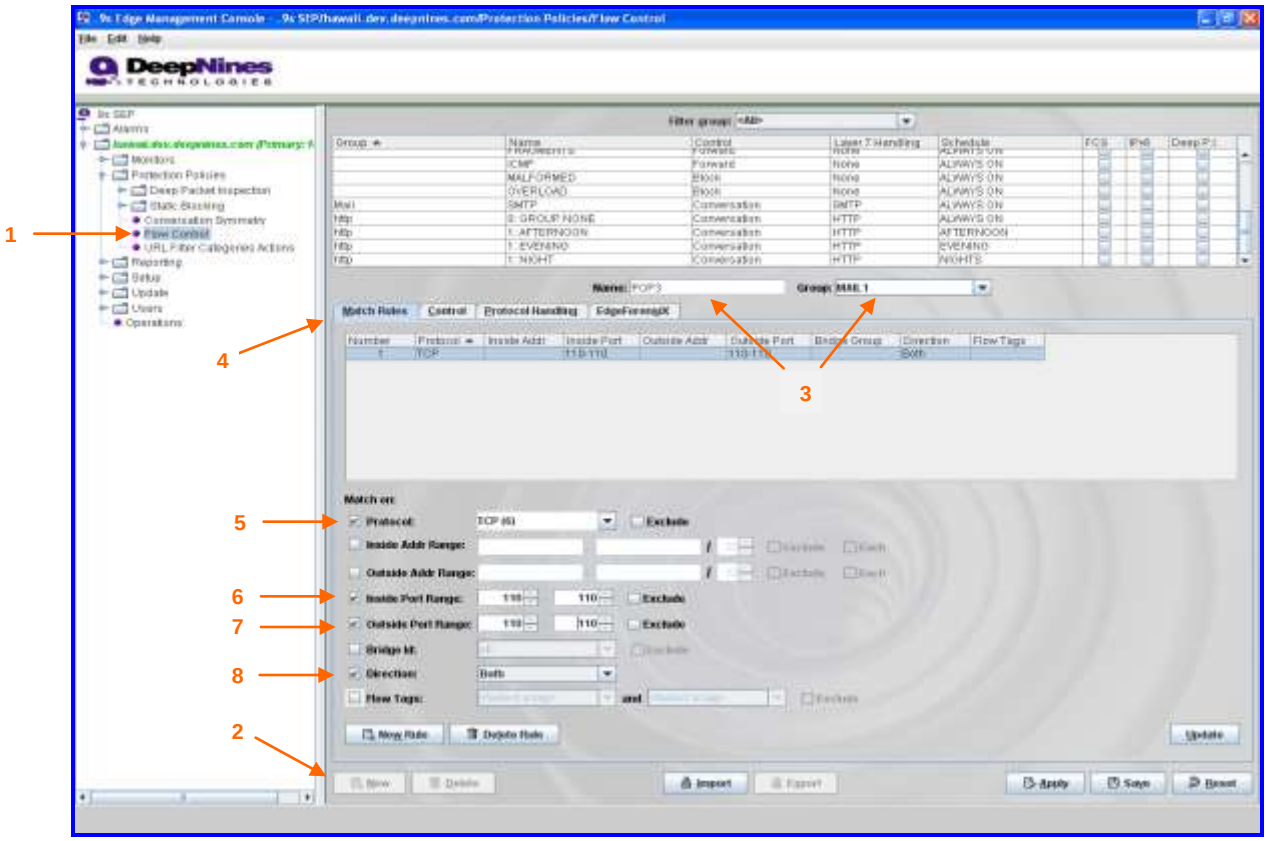


Figure 5-4. Configuring POP3 – Match Rules Screen

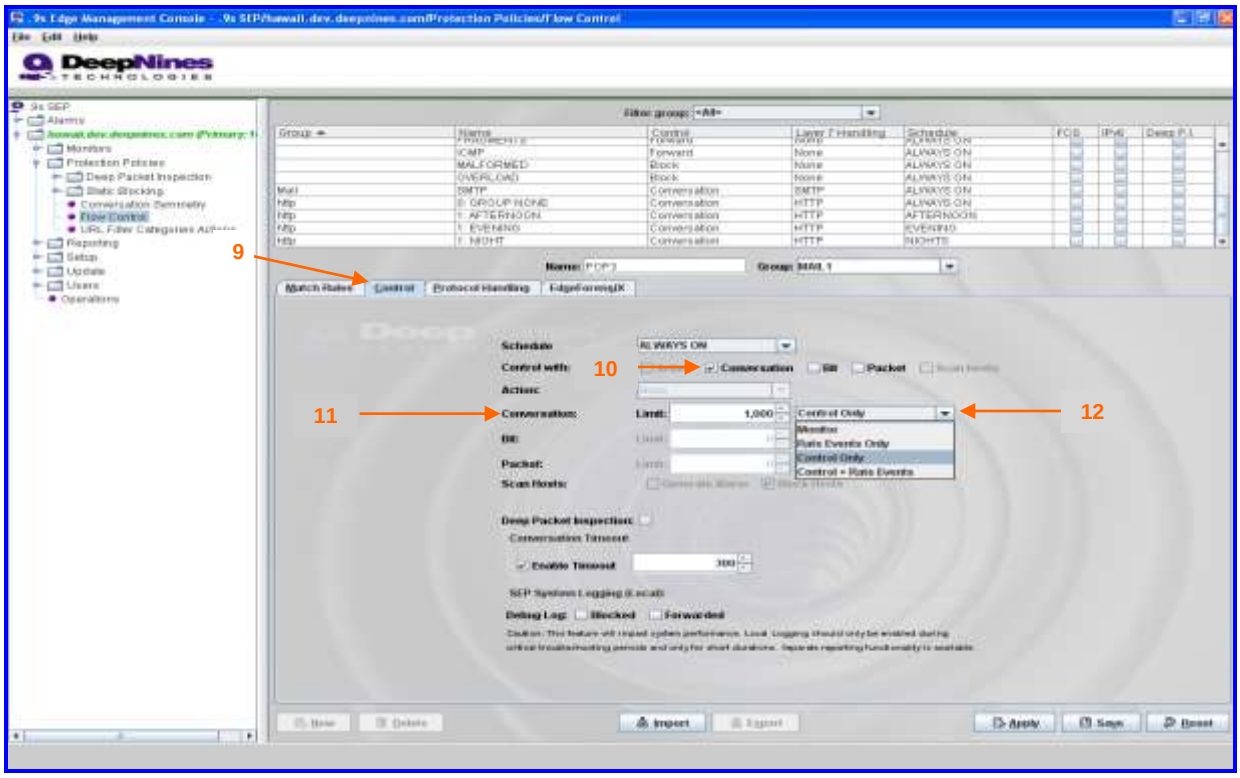


Figure 5-5. Configuring POP3 – Control Screen

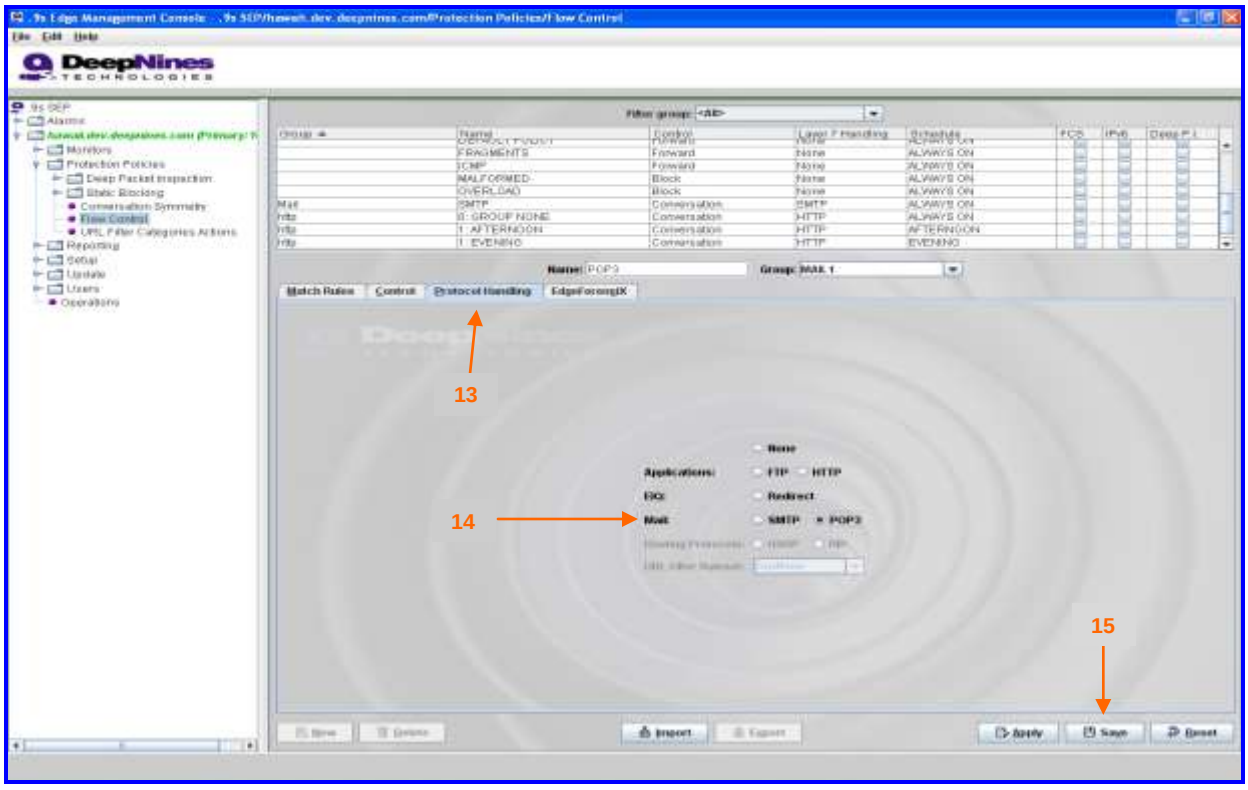


Figure 5-6. Configuring POP3 – Protocol Handling Screen

5.3 How to Create a Flow Spec for IPS and IPS/IDS

This example illustrates how to create a normal flow spec for IPS protection on conversation rate of TCP port 80. If needed, it can be changed to also control on bit/packet rate. This example can be modified for any other type of TCP traffic. In this particular flow, protection for inbound/outbound traffic is described.

Perform the following steps to create flow specs for IPS and IPS/IDS use:

1. Navigate to the Protection Policy, highlight and click on Flow Control. The Flow Control screen appears (Figure 5-7).
2. Create a new Flow Control configuration by clicking **<NEW>**.
3. Enter data for Name and Group.
4. Click on Match Rules tab on top row of tabs.
5. Click and place check mark in small box next to Protocol. Click on pull-down menu to display options. Protocol = TCP(6).
6. Click and place a check mark in the small box next to either Inside Port Range or Outside Port. The Port Range should be 80-80.
7. Click and place check mark in small box next to Direction. Click on pull-down to display options. Direction = Both
8. Click on Control tab on top row of tabs (Figure 5-8).
9. Click and place check mark in small box in Conversation.
10. Select Conversations / Limit = 50 by selecting up & down arrows.
11. Select Control Only from pull-down menu.
12. Click Protocol Handling tab on top row of tabs (Figure 5-9).
13. Select **<NONE>.**
14. Click **<SAVE>**.

To change the configuration for IDS protection,

1. Click on Control tab on top row of tabs (Figure 5-10).
2. Click and place a check mark in small box next to Deep Packet Inspection to enable it.
3. Click **<SAVE>**.

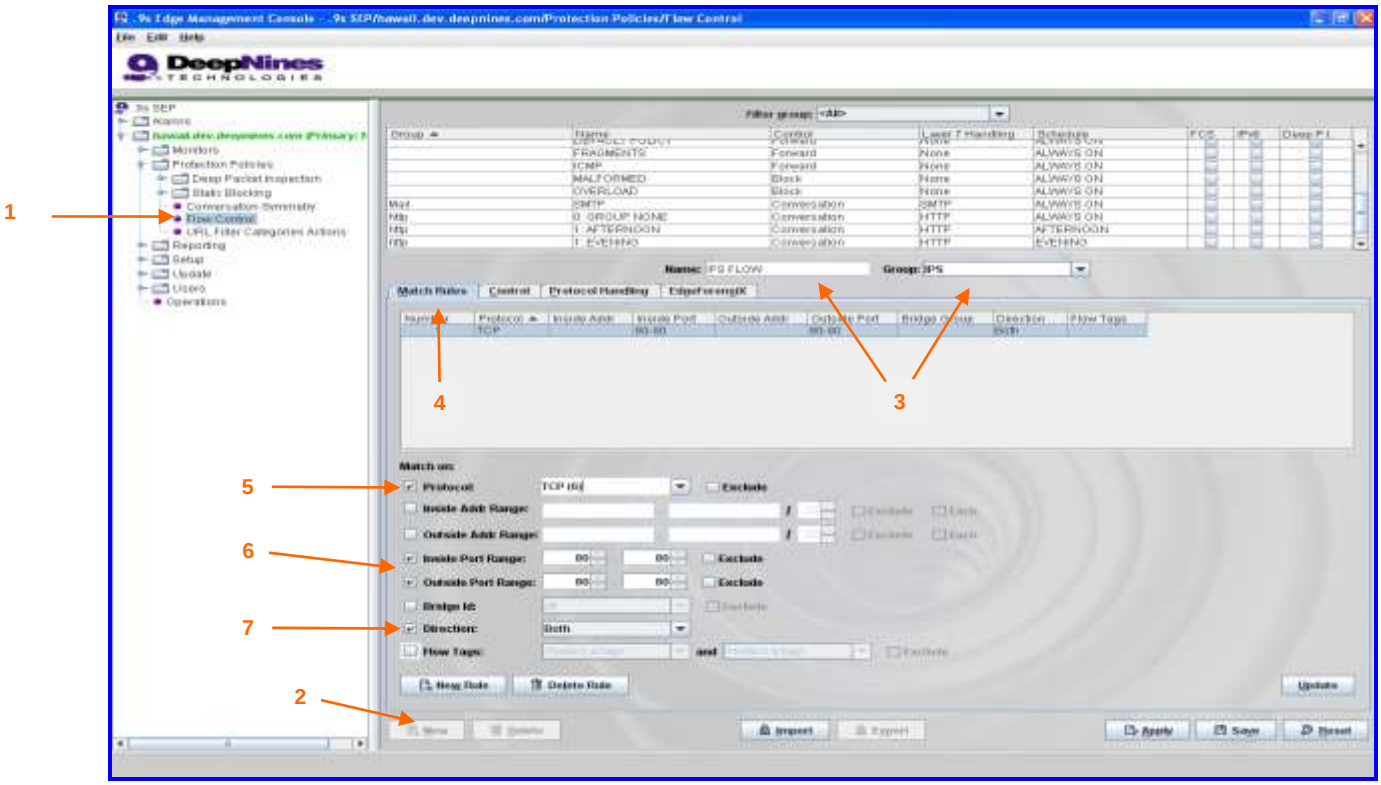


Figure 5-7. Creating a Flow Spec for IPS and IPS/IDS - Match Rules Screen

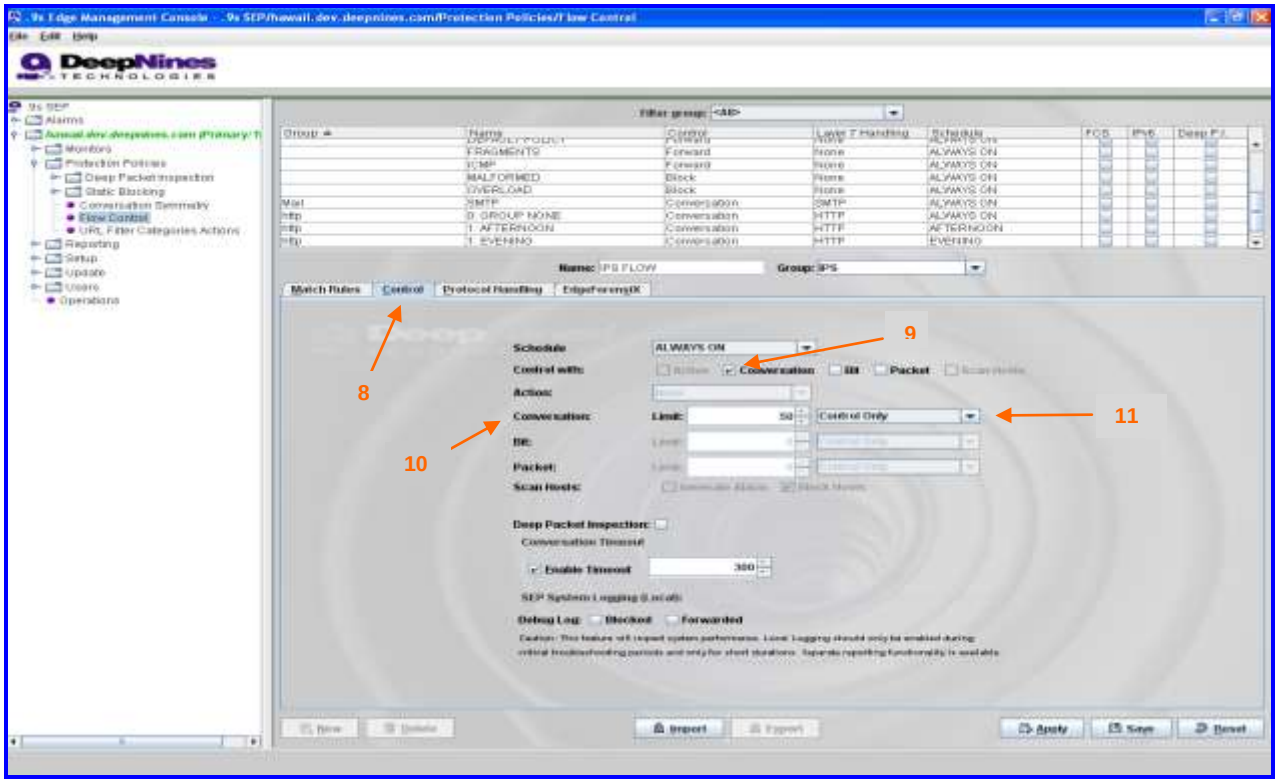


Figure 5-8. Creating a Flow Spec For IPS and IPS/IDS– Control Screen

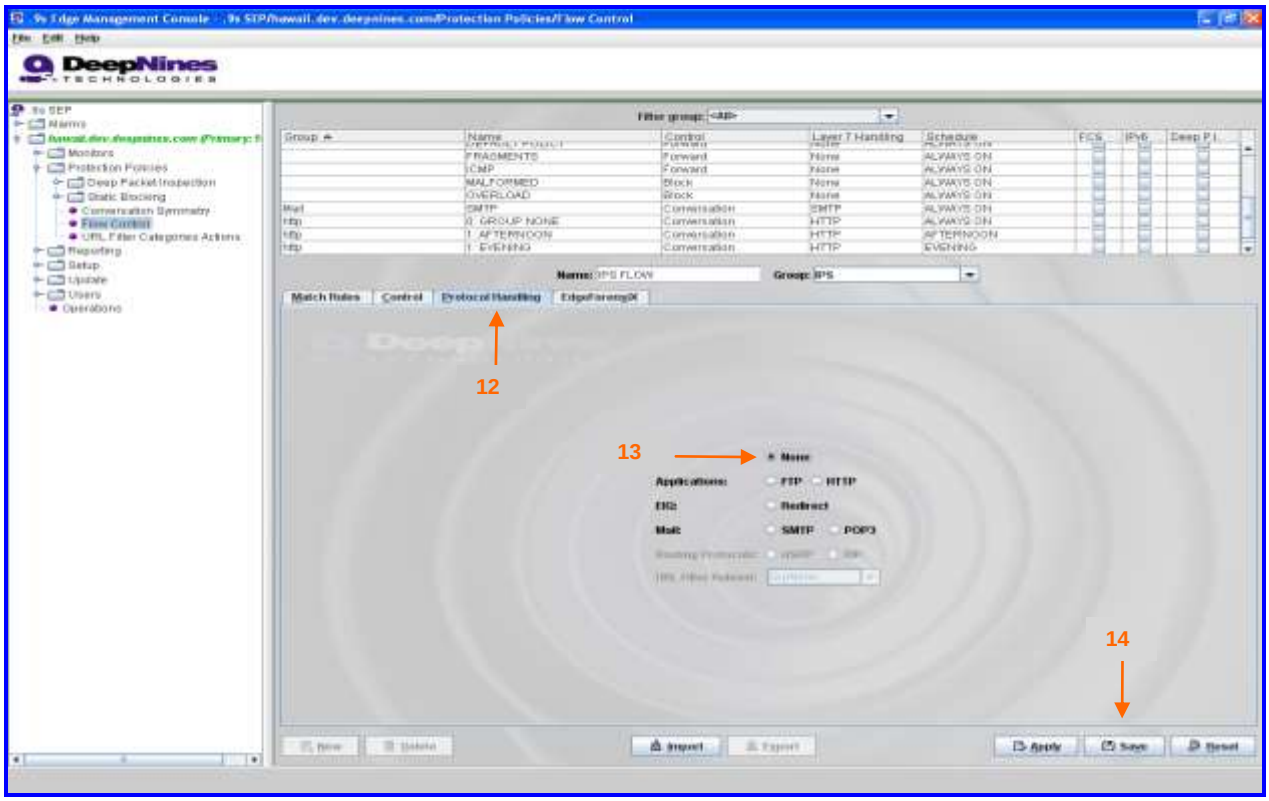


Figure 5-9. Creating a Flow Spec For IPS and IPS/IDS – Protocol Handling Screen

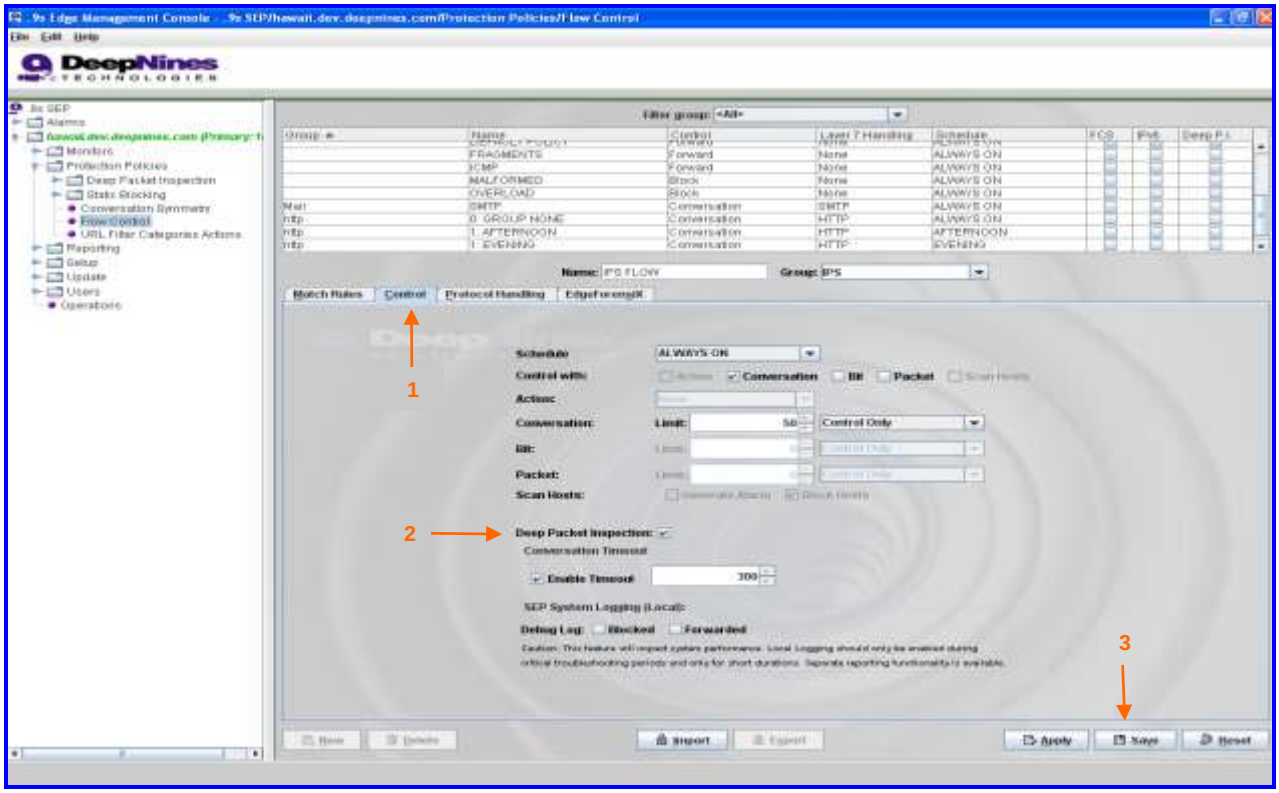


Figure 5-10. Creating a Flow Spec For IDS – Control Screen

5.4 How to Setup URL Filtering

To properly set up URL Filtering, you need to create your URL rule sets, create the flow tags contained in the active directory groups, and create all the flow specs.

The new black and white lists will behave the same as admin black and white lists. The only distinction is that instead of applying globally, they will be applicable per ruleset and, therefore, per user.

URL Filter Rules make rules on URL categories per rule set.

To Create a New Ruleset:

1. Log in to the SEP host.
2. Select URL Filter Rules from the Protection Policies folder.
3. Click on **<NEW RULESET>** (Figure 6-20). A New Ruleset screen appears.
4. Select desired option from the “Copy From” pull-down menu.
5. Enter the desired name and description for the ruleset in the fields provided and click **<OK>**. The ruleset name will appear in field of pull-down menu at top middle of screen.

To Create New Category-Based Rules:

1. Select and highlight one of pre-set categories listed to edit (Figure 6-21).
2. Select action desired from pull-down menu <**ALLOW> <BLOCK> <REDIRECT>**.

   ALLOW: Selecting this action allows a request.

   BLOCK: Selecting this action allows a block.

   REDIRECT: Selecting this action allows for redirect. Make certain that you specify the complete URL i.e., "http://www.deepnines.com". If you want to redirect www.xyz.com to www.deepnines.com, by entering www.deepnines.com, you will get http://www.xyz.com/www.deepnines.com and not http://www.deepnines.com .
3. Place check mark in Log Enabled box to allow logging of all activity
4. Click **<SAVE>**.

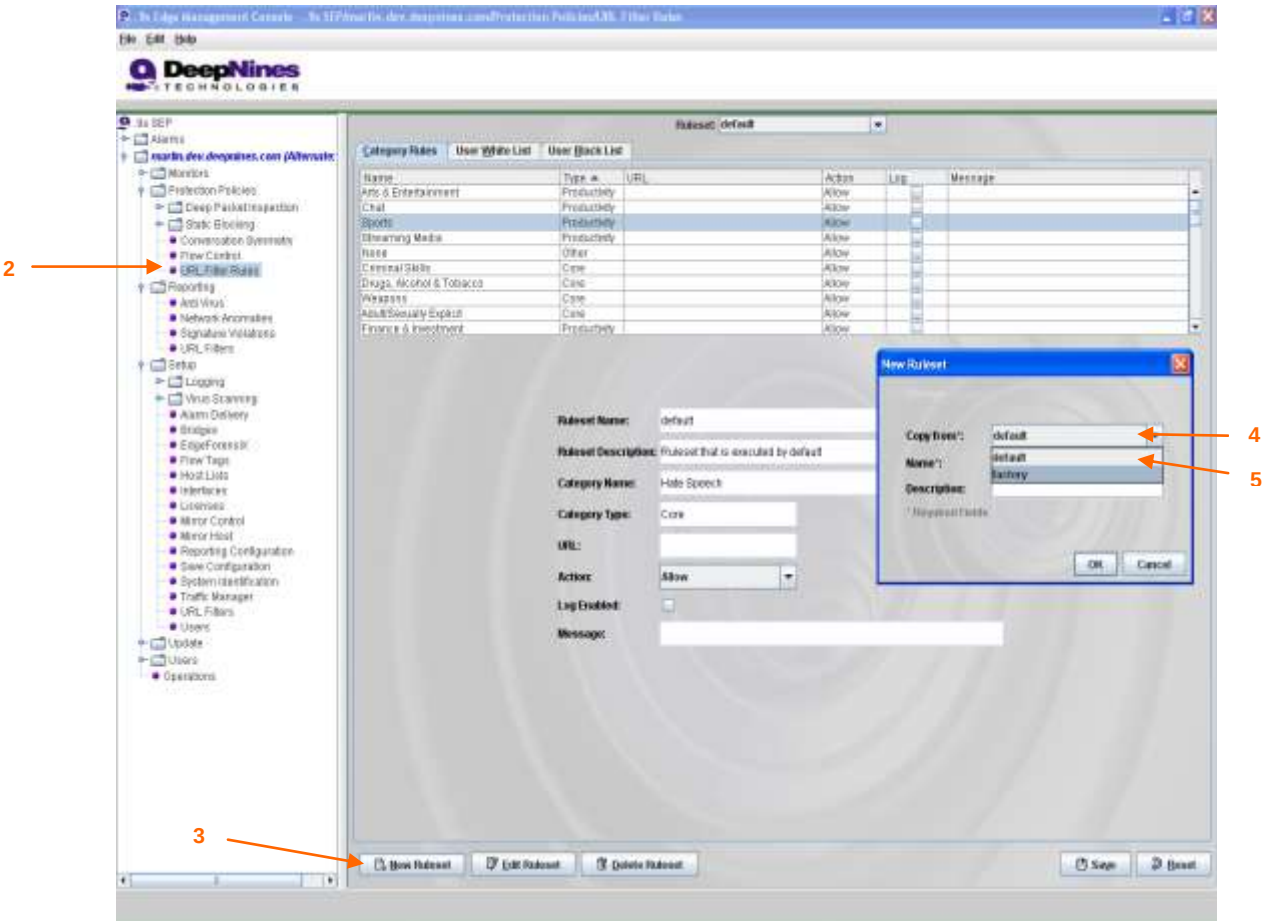


Figure 6-20. URL Filter Categories Actions

To edit an existing Rule Set

1. Select and highlight one of pre-set categories listed to edit.
2. Select action desired from pull-down menu **<ALLOW> <BLOCK> <REDIRECT>** to change.
3. Place check mark in Log Enabled box to allow logging of all activity
4. Click **<SAVE>**.

5.4.1 Flow Spec Schedules

You can turn Flow Specs on and off based on a 5-part schedule. The 5 parts of the schedule consists of:

- Start of Morning (default 8am)
- Start of Afternoon (default 3pm)
- Start of Evening (default 5:30pm)
- Start of Night (default 9pm)
- Weekend (default Saturday & Sunday)

Flow Specs do not have priorities. We do not have the concept of a best matching Flow Spec. If you define an FTP Flow Spec as "ALWAYS ON" and another FTP Flow Spec as "MORNINGS", they both are valid. Because it is in the morning, it does not mean that matching Flow Spec has priority.

Scheduling Options Include:

Always On	This is the default and it is active 24x7.
Disabled	To turn off a flow spec, you disable it.
School Day	From the start of the morning until the start of the afternoon.
Afternoon	From the start of the afternoon until the start of the evening.
Evening	From the start of the evening until the start of the night.
Full Day	From the start of the morning until the start of the evening.
Day and Evening	From the start of the morning until the start of the night.
After School	From the start of the afternoon until the start of the night
Nights	From the start of the night until the start of the morning.
Weekends	From 12:00 AM Saturday morning until 11:59 PM Sunday night.
Nights and Weekends	See previous entries

Schedule View:

Schedule Name	Night/AM (Mid-T1)	School Day (T1-T2)	Afternoon (T2-T3)	Evening (T3-T4)	Night/PM (T4-Mid)
	12am - 8am	8am - 3pm	3pm - 5:30pm	5:30pm - 9pm	9pm - 12am
ALWAYS ON (everyday)					
DISABLED (everyday)					
SCHOOLDAY (M-F)					
AFTERNOON (M-F)					
EVENING (M-F)					
FULL DAY (M-F)					
DAY & EVENING (M-F)					
AFTER SCHOOL (M-F)					
NIGHTS (M-F)					
WEEKENDS (Sat/Sun)					
NIGHTS & WEEKENDS					
Monday - Friday					
Saturday/Sunday					

5.4.2 Putting It All Together For Custom URL Filtering

There is only one default behavior and that is the "DEFAULT POLICY" Flow Spec.

Step One: The first step is creating a spreadsheet with your objectives. An example of a spreadsheet is illustrated in the following table.

AD Group	8:00 AM		3:00 PM		5:30 PM		9:00 PM		Weekend	
K-5 Students		URL Rule Set 01		URL Rule Set 01		Default Policy		Default Policy		Default Policy
6-8 Students		URL Rule Set 01		URL Rule Set 02		URL Rule Set 02		Default Policy		URL Rule Set 02
9-12 Students		URL Rule Set 02		URL Rule Set 03		URL Rule Set 03		URL Rule Set 03		URL Rule Set 03
Teachers		URL Rule Set 02		URL Rule Set 04		URL Rule Set 04		URL Rule Set 04		URL Rule Set 04
Admin		URL Rule Set 04		URL Rule Set 04		URL Rule Set 04		URL Rule Set 04		URL Rule Set 04
Group None		URL Rule Set 01		URL Rule Set 01		URL Rule Set 01		Default Policy		Default Policy

In the above table, the Default Policy is set to "Block". If the Default Policy were set to “Forward”, there would not be any controls placed on the K-12 students during the evenings, nights, and weekends.

If an AD group is specified in a Flow Spec for one schedule period, Flow Specs will need to be created for all the schedule periods. Otherwise the control will go to the Default Policy. “Group None” does not specify a default behavior for AD Groups that are managed in any other Flow Spec. “Group None” is intended to cover users that do not belong to a group already managed in a Flow Spec. Using the table above, "Group None" might cover parents, substitute teachers, teacher’s aids, and kitchen staff.

Step Two: You will need to create your URL rule sets.

a) Create the Flow Tags containing the AD Groups.

We do not have the ability to assign users to a flow tag. All controls are done at an AD Group level. You can combine multiple AD Groups into a single Flow Tag. Each Flow Tag is given a Priority where 1 is the highest. If a user belongs to multiple AD Groups included in multiple Flow Tags, the user will always be associated with the highest priority Flow Tag regardless of schedule. An example of this would be:

Joe belongs to a group included in Flow Tag X, which is set to priority 1. Joe also belongs to a group included in Flow Tag Y, which is set to priority 2. Flow Tag X is included in Flow Spec X scheduled for the "School Day". Flow Tag Y is included in Flow Spec Y scheduled for "After School". Joe will never be associated with Flow Spec Y. When "After School" arrives, the “Default Policy” Flow Spec will control it.

- FlowTag #1: AD Group = K-5 Students; priority = 1
- FlowTag #2: AD Group = 6-8 Students; priority = 2
- FlowTag #3: AD Group = 9-12 Students; priority = 3
- FlowTag #4: AD Group = Teachers; priority = 4
- FlowTag #5: AD Group = Admin; priority = 5

- "Group None" is created by default

b) Create ALL the Flow Specs.

- HTTP FS #1
  Flow Tag #1
  URL Rule Set 01
  Schedule = Full Day

- HTTP FS #2
  Flow Tag #2
  URL Rule Set 01
  Schedule = School Day

- HTTP FS #3
  Flow Tag #2
  URL Rule Set 02
  Schedule = After School

- HTTP FS #4
  Flow Tag #2
  URL Rule Set 01
  Schedule = Weekends

- HTTP FS #5
  Flow Tag #3
  URL Rule Set 02
  Schedule = School Day

- HTTP FS #6
  Flow Tag #3
  URL Rule Set 03
  Schedule = After School

- HTTP FS #7
  Flow Tag #3
  URL Rule Set 03
  Schedule = Nights and Weekends

- HTTP FS #8
  Flow Tag #4
  URL Rule Set 02
  Schedule = School Day

- HTTP FS #9
  Flow Tag #4
  URL Rule Set 04
  Schedule = After School

- HTTP FS #10
  Flow Tag #4
  URL Rule Set 04
  Schedule = Nights and Weekends

- HTTP FS #11
  Flow Tag #5
  URL Rule Set 04

Schedule = Always On

- HTTP FS #12
  Group None (GRP_NONE)
  URL Rule Set 01
  Schedule = Day and Evening

For additional information on URL Filtering, refer to Section 6.5.16, *"URL Filters*,

ADDITIONAL HOW-TOs

- Create New Custom DPI Rules
- Reconfigure a New Network Interface Card or Reconfigure Existing Ones
- Access the Reporting System
- Access the Hallpass System

SEP Resources

6

6.1 Overview

This section provides an overview of the folder resources available to configure and control the SEP from the Command Explorer pane. Available resources are:

- Monitors
- Protection Policies
- Reporting
- Setup
- Update
- Users
- Operations

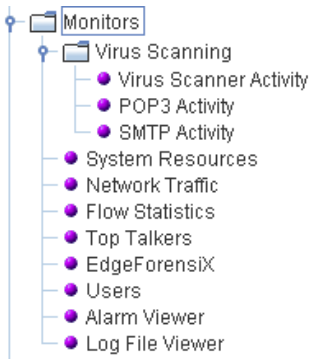
Expanding on each of these folder resources allows you to select informational and configurable settings that are displayed.

NOTE

Do not attempt to change any system-configuration parameters for the Security Edge Platform at the operating system level. Attempting to do so could break the SEP appliance. All system-configuration parameters, such as the unit's IP address, must be configured through the EMC.

6.2 Monitors

The Monitors section of the Command Explorer provides a graphical representation of the following displays.



This display allows the current logged on user to view other users that are logged onto the system. It will also display hostname and logon time information. Each of the graphical displays is discussed in detail. Under Virus Scanning, there are three activity displays; Virus Scanner Activity, POP3 Activity, and SMTP Activity.

6.2.1 Virus Scanner Activity

Virus Scanner Activity (Figure 6-1) displays different characteristics that are involved with the overall virus scanner. The virus scanner will take the email that is coming into or out of the network and give it to the appropriate protocol scanner, SMTP or POP3.

The top of the menu (Figure 6-1) displays numerous statistics about the Virus Scanner Activity. These labels and explanations are described in Table 6-1.

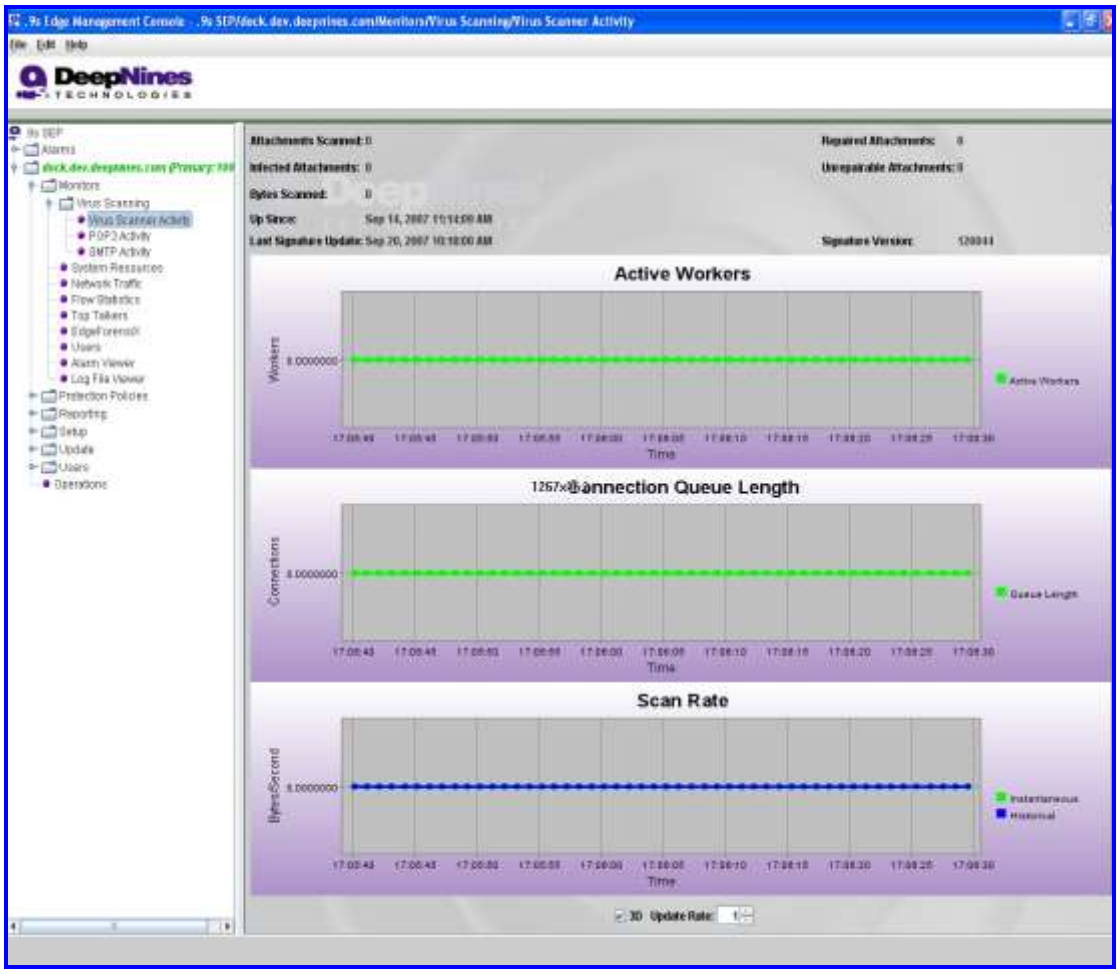


Figure 6-1. Virus Scanner Activity Display

Label	Explanation
Attachments Scanned	Displays the total number of email attachments scanned since the up time date/time.
Infected Attachments	Displays the total number of virus infected attachments taken out of emails since the up time data/time.
Bytes Scanned	The total number of bytes scanned of attachments.
Up Since	Displays when the Virus Scanner engine was last started.
Last Signature Update	Displays when the last signature update was performed.
Repaired Attachments	Shows the number of attachments that were repaired (virus removed and sent original attachment)
Un-repairable Attachments	Shows the number of attachments that were removed. * (see note)
Signature Version	Displays the current anti-virus signature version being used by the Virus Scanner.

Table 6-1. Label and Explanations

If an attachment is unrepairable, the attachment is replaced with a text file. This text file has the same file name as the virus, but the extension is .txt. If the user opens the file, they will see a message that the original attachment was infected and has been deleted. These messages can be customized and are discussed further in this manual.

The line graphs allow the user to view how many active emails are being scanned by the Virus Scanner. You can also view if there are any email conversations waiting in the queue and the overall scan rate of the Virus Scanner. There are 224 workers assigned to the Virus Scanner that are distributed out to the SMTP and POP3 scanners (112 each).

6.2.2 SMTP Activity

SMTP Activity displays different characteristics that are involved with the SMTP virus scanner. The SMTP scanner will take the SMTP emails coming into or out of the network and then scan it against the signature database. The top of the menu (Figure 6-2) displays numerous statistics about the Virus Scanner Activity. These labels and explanations are described in Table 6-2.

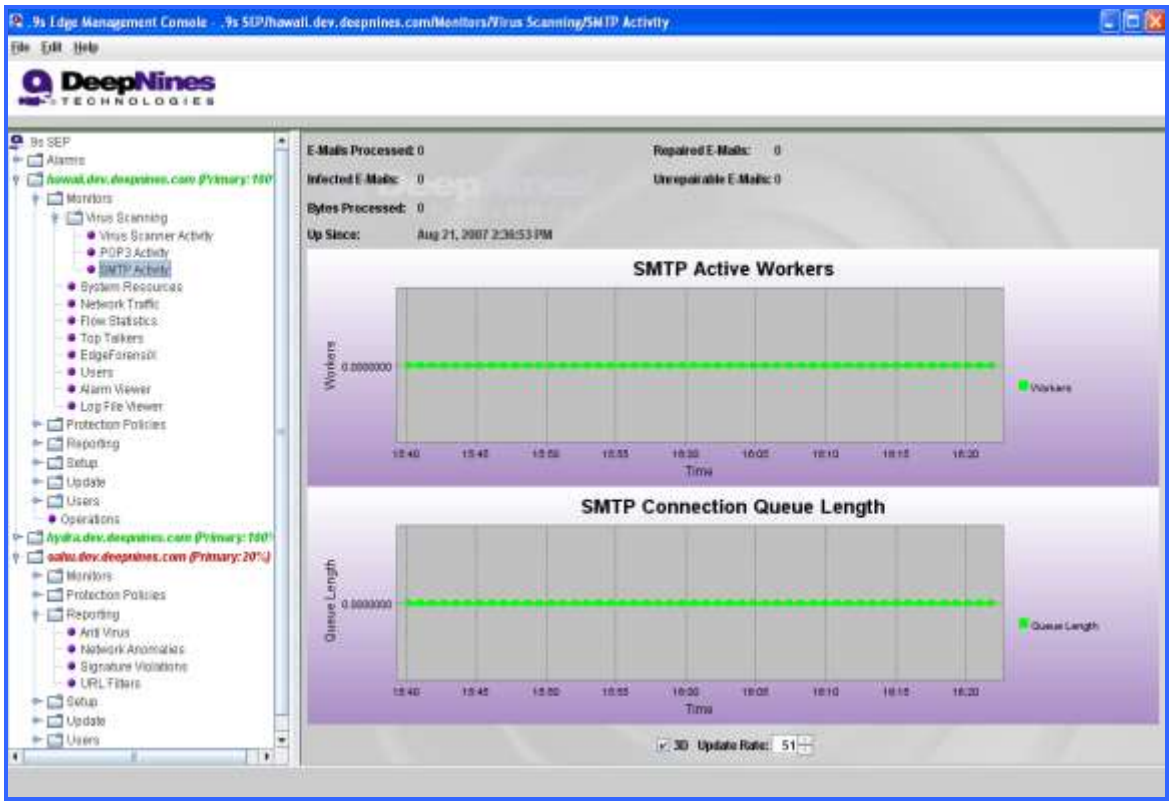


Figure 6-2. SMTP Activity Display

Label	Explanation
Email Processed	Displays the total number of SMTP emails processed or scanned since the up time date/time.
Infected Emails	Displays the total number of virus infected SMTP emails since the up time data/time.
Bytes Processed	The total number of bytes scanned of SMTP emails.
Up Since	Displays when the SMTP engine was last started.
Repaired Emails	Shows the number of emails that were repaired (virus removed and sent original email)
Un-Repairable Emails	Shows the number of emails that were removed. * (see below note)

Table 6-2. Label and Explanations

NOTE

If an email is un-repairable and contains an attachment, the attachment is replaced with a text file. This text file has the same file name as the virus but the file extension is .txt. If the user opens the file they will see a message that the original attachment was infected and has been deleted. These messages can be customized and are discussed further under the configuration section.

The line graphs will allow the user to view how many active workers are being used by the SMTP Scanner, as well as if there are any email conversations waiting in the queue. There are 112 assigned to the SMTP Scanner. Depending on the number of emails in the queue it may be necessary to assign more workers to the SMTP scanner. Please contact Deepnines Technical Support for assistance with this procedure.

6.2.3 POP3 Activity

POP3 Activity will display different characteristics that are involved with the POP3 virus scanner. The POP3 scanner will take the POP3 emails coming into or out of the network and then scan it against the signature database. The top of the menu (Figure 6-3) displays numerous statistics about the Virus Scanner Activity. These labels and explanations are described in Table 6-3.

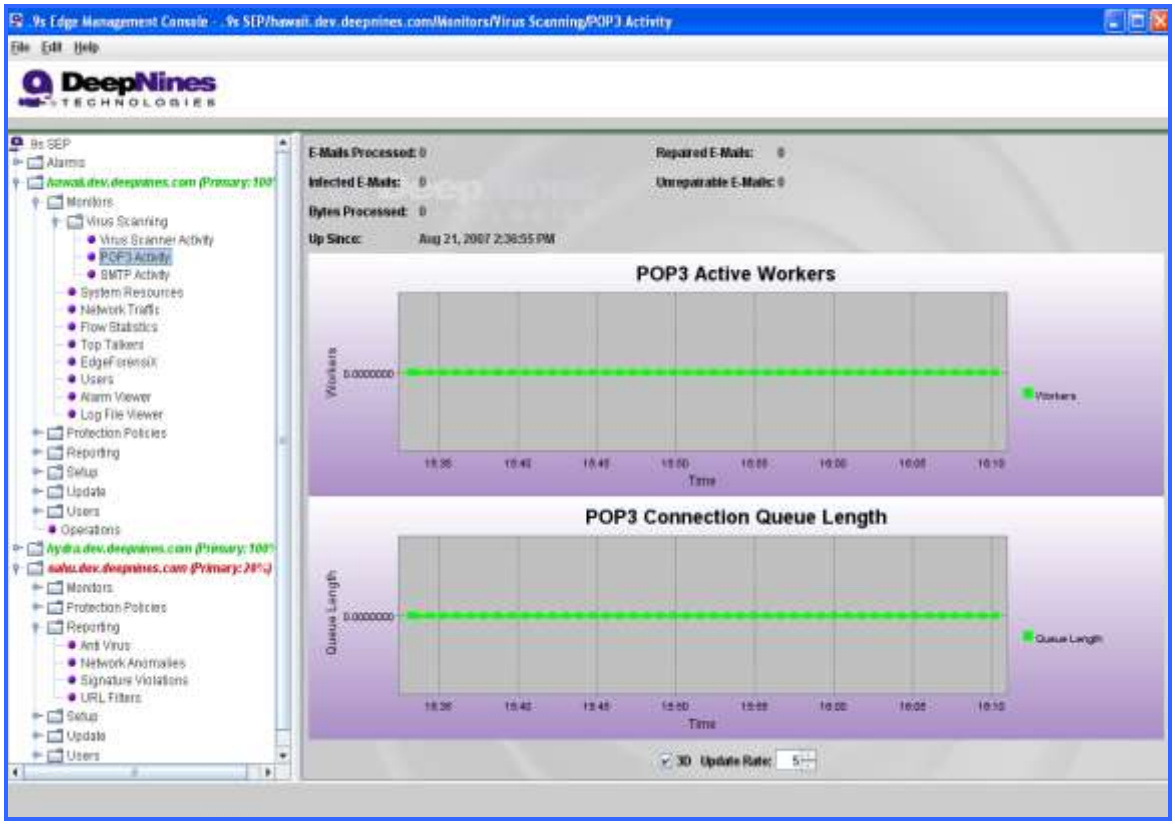


Figure 6-3. POP3 Activity Display

Label	Explanation
Email Processed	Displays the total number of POP3 emails processed or scanned since the up time date/time.
Infected Emails	Displays the total number of virus infected POP3 emails since the up time data/time.
Bytes Processed	The total number of bytes scanned of POP3 emails.
Up Since	Displays when the POP3 engine was last started.
Repaired Emails	Shows the number of emails that were repaired (virus removed and sent original email)
Un-Repairable Emails	Shows the number of emails that were removed. * (see below note)

Table 6-3. POP3 Activity Display

If an attachment is un-repairable, the attachment is replaced with a text file. This text file has the same file name as the virus, but the extension is .txt. If the user opens the file, they will see a message that the original attachment was infected and has been deleted. These messages can be customized and are discussed further in this manual.

The line graphs allows the user to view how many active workers are being used by the POP3Scanner, as well as if there are any email conversations waiting in the queue. There are 112 assigned to the POP3 Scanner. Depending on the number of emails in the queue it may be necessary to assign more workers to the POP3 scanner. Please contact Deepnines Technical Support for assistance with this procedure.

Each of the graphical displays contain the following controls:

- A 3D check box, which allows you to switch between three-dimensional and two-dimensional graphs and charts.
- An Update Rate control, which allows you to specify the refresh rate for the graphs and charts displayed in the window. By default it is set to 5, changing to 1 will increase the frequency of updates to 1 second.
- A zoom in, zoom out and auto range by right clicking on your mouse and selecting the desired setting. If you zoom in/out and want to return to the original setting. Select Auto Range > Both Axes.

6.2.2 System Resources

The System Resources display (Figure 6-4) allows the administrator to view complete system health information. This includes link status, engine status, fail-over state, suspicious or bad file modes, CPU, disk and memory utilization, as well as packet per second, interrupts per second, last update and system uptime.

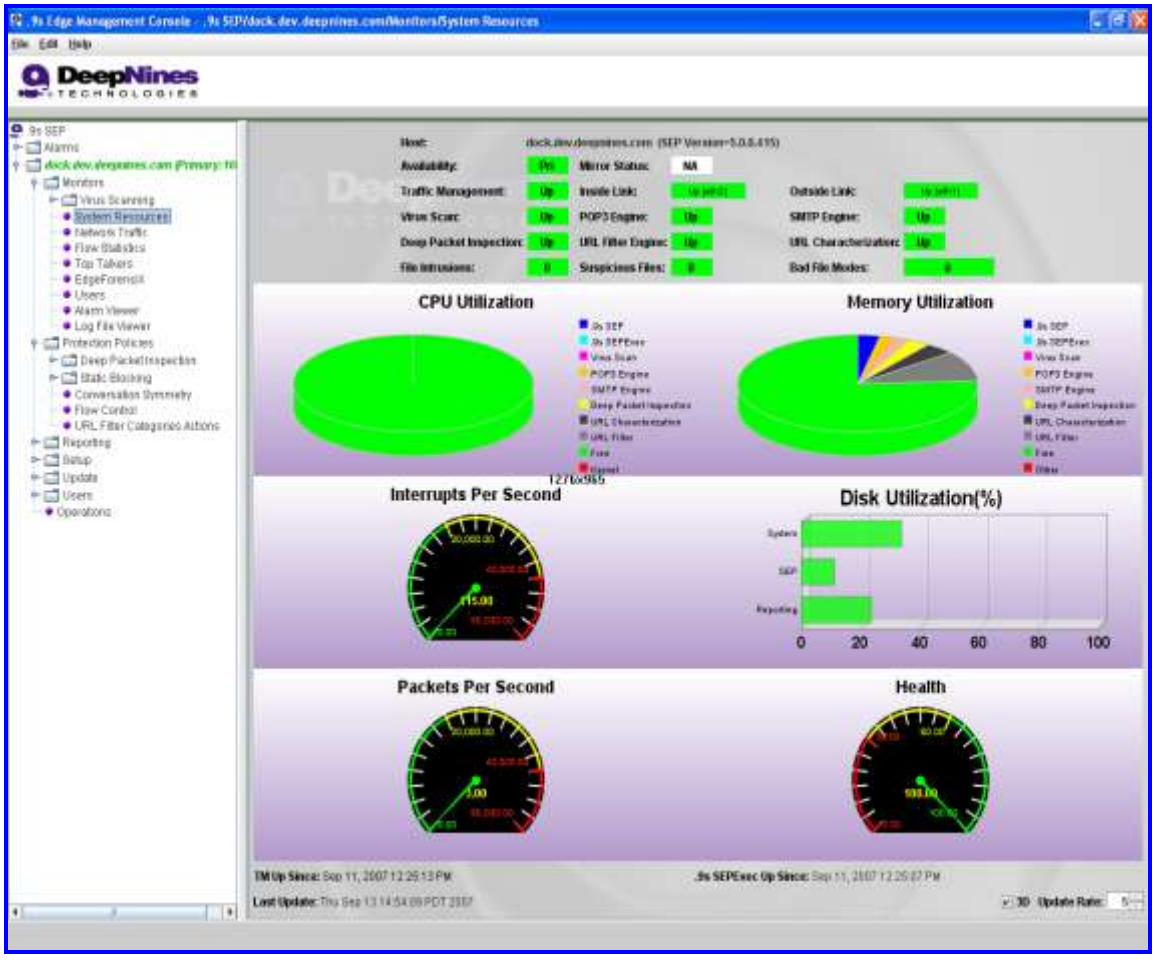


Figure 6-4. System Resource Display

6.2.2 Network Traffic

To view the Network Traffic, navigate to the Monitors section and select Network Traffic. Within this page (Figure 6-5) you can view the aggregate traffic traversing the SEP both inbound and outbound.

There are 3 different lines that are visible on each graph and are outlined in Table 6-4.

Offered (Yellow Line)	The amount of traffic that is matching the particular flow
Allowed (Green Line)	The amount of traffic that has passed all tests and is allowed in the network.
Blocked (Red Line)	The amount of traffic that is blocked within that flow.

Table 6-4. Colored Graph Lines

This directly correlates to the selection at the bottom of the page. You can view the Network Traffic by Bit Rate, Byte Rate, Packet Rate or Conversation Data i.e., you might see the offered (yellow line) hovering around 4,000,000. If the Bit Rate is selected at the bottom of the page then this is representative of 4Mbps of aggregate bandwidth. (1,000,000 bits = 1Mpbs, 600,000 bits=600Kbps)

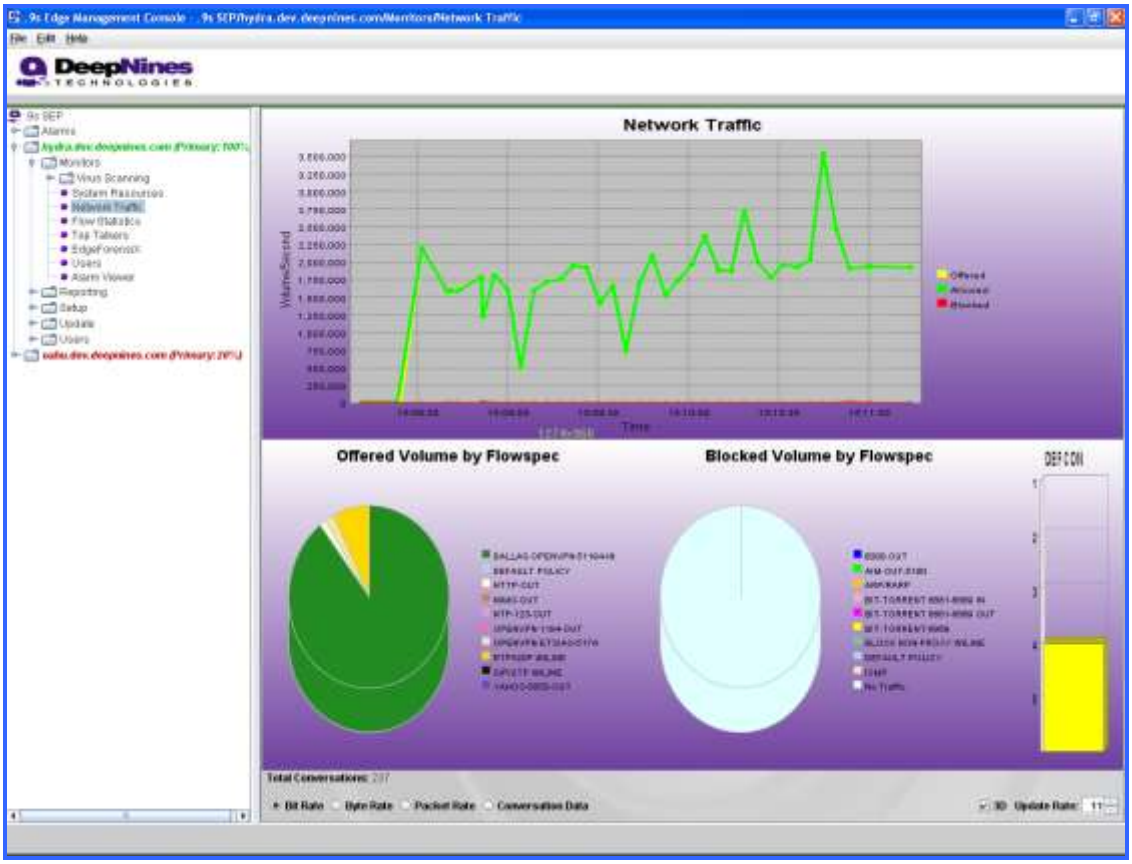


Fig 6-5. Network Traffic Display

Also contained on the Network Traffic display are two pie charts labeled, “Offered Volume by Flow Specifier” and “Blocked Volume by Flow Specifier”. Each of these are explained as follows:

Offered Volume by Flow Specifier:

This pie chart displays the dissection of the incoming and outgoing traffic while applying it to each Flow Specifier that has been set up. The top 10-20 Flow Specifiers will be represented. For example, if you took the Internet connection and sliced it in half, peered into it, this would be the traffic that is making up that connection. If a mouse is hovered over the top of any of the sections, it will display the name of the Flow Specifier, show the count of bits, and display a percentage of bandwidth used.

Blocked Volume by Flow Specifier:

This pie chart is similar to the Offered Volume by Flow Specifier pie chart but is representative of the amount of traffic that is violating a certain policy within the SEP, and is being blocked or curbed down. Again it will display the top 10-20 Flow Specifiers that have been or are getting blocked. If a mouse is hovered over the top of any of the sections, it will display the name of the Flow Specifier, show the count of bits being blocked, and the percentage of overall bandwidth that is being blocked in that particular Flow Specifier.

If the Blocked Volume by Flow Specifier is entirely one shade or showing one flow specifier, it does not mean that all of the traffic of that flow specifier is getting blocked. It means that out of the blocking that is occurring, that 100% happens to fall within that one Flow Specifier.

DEFCON:

This chart illustrates the defense condition of the network (1-5:1 being the most critical, 5 being the least critical). Depending on how much your network is under attack i.e., flow spec being violated, the DEFCON chart will show condition.

Other Features within Network Traffic:

The total number of conversations is also represented in the Network Traffic monitor. Towards the bottom left you will see the Total Conversations. This is represented as the number of conversation that we have in our KGH tables.

- There is also the ability to view the graphs and charts in 2D mode. By deselecting the 3D check box the visualization will become 2D.
- The Update rate is described later in this document.

6.2.3 Flow Statistics

For each of the flow specifiers that were defined the administrator can view the real-time statistics for that particular flow. For example, if the HTTP-Incoming TCP port 80 was defined then you can select the corresponding Flow Statistic to view the new connections per second, the total bit rate of incoming HTTP traffic and the complete packet rate.

There are 4 different lines that are visible on each graph and are outlined in Table 6-5.

Offered (Yellow Line)	The amount of traffic that is matching the particular flow
Allowed (Green Line)	The amount of traffic that has passed all tests and is allowed in the network.
Blocked (Red Line)	The amount of traffic that is blocked within that flow.
Historical (Blue Line)	The historical amount of traffic that this flow has seen.

Table 6-5. Colored Graph Lines

To view a Flow Statistic for a defined Flow Specifier, perform the following:

1. Log in to the SEP host.
2. Select Flow Statistics from the Monitors folder.
3. Select from the drop down menu (bottom left) the particular Flow Specifier Name that you want to view statistics for.

If the historical limit is set to zero then no traffic has been seen on this flow in the last 10 minutes. If the historical limit is very low then there has been traffic but it has now discontinued.

4. Select the desired group from the Group drop down menu. The Connection, Bit and Packet charts will start to fill in with the corresponding real-time information as shown in (Figure 6-6).

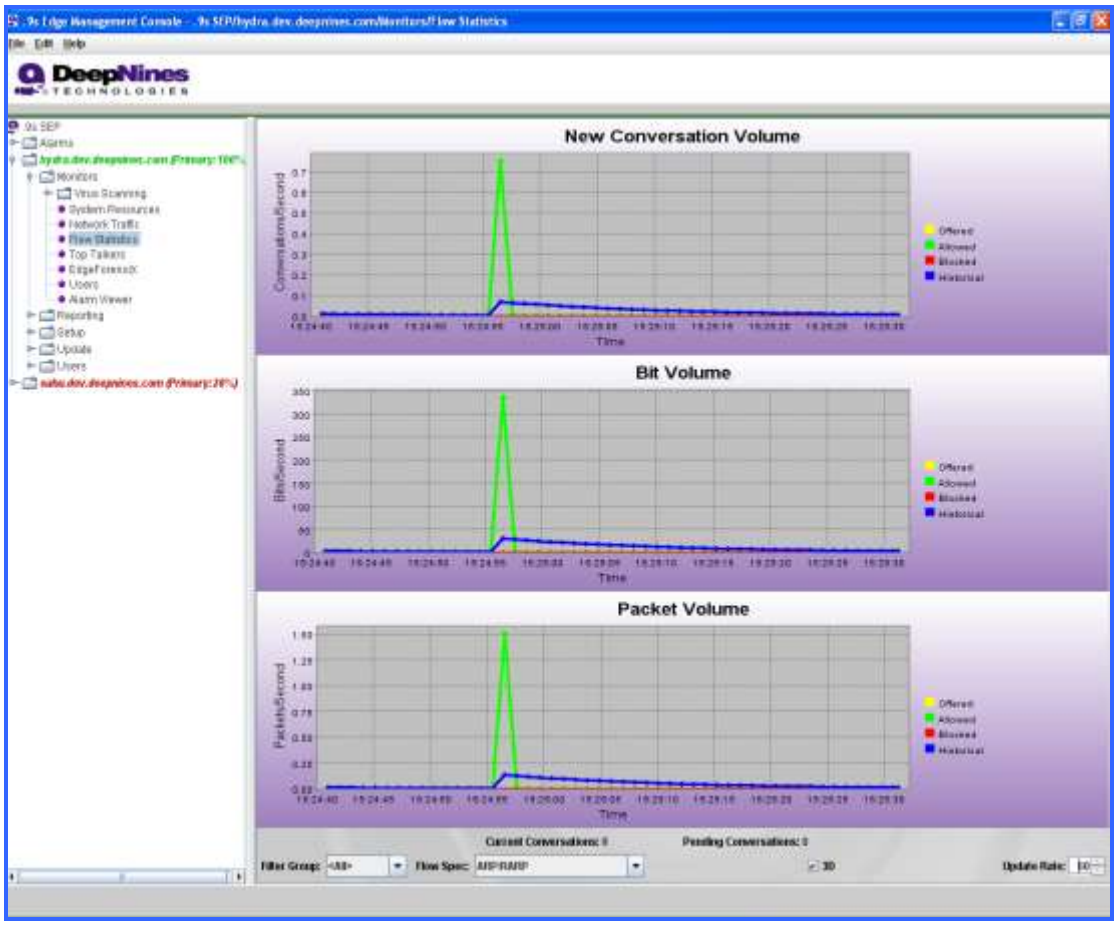


Figure 6-6. Flow Statistics Display

Viewing Current and Pending Conversations

At the bottom of the Flow Statistics graph the Current and Pending Conversations are displayed as taken from the KGH table and pending table. Current conversations have met all criteria for entering or leaving the network, while pending conversations are partial connections.

6.2.4 Top Talkers

The Top Talkers Report is a snapshot (Figure 6-7) representing which conversations or flows are using most of the bandwidth. The refresh rate is set to 60 seconds by default but can be shortened by any user. Additionally, you can instantly get a snapshot of the top talkers by selecting 'Get Report'.

User-selectable information that is displayed in the report is based on the 5-tuple information that the SEP Traffic Manager has in its KGH tables. To limit the information that is returned by the IP address, port or protocol, the user simply unchecks the unwanted tuple. The user can then select "Get Report" or wait until the next refresh.

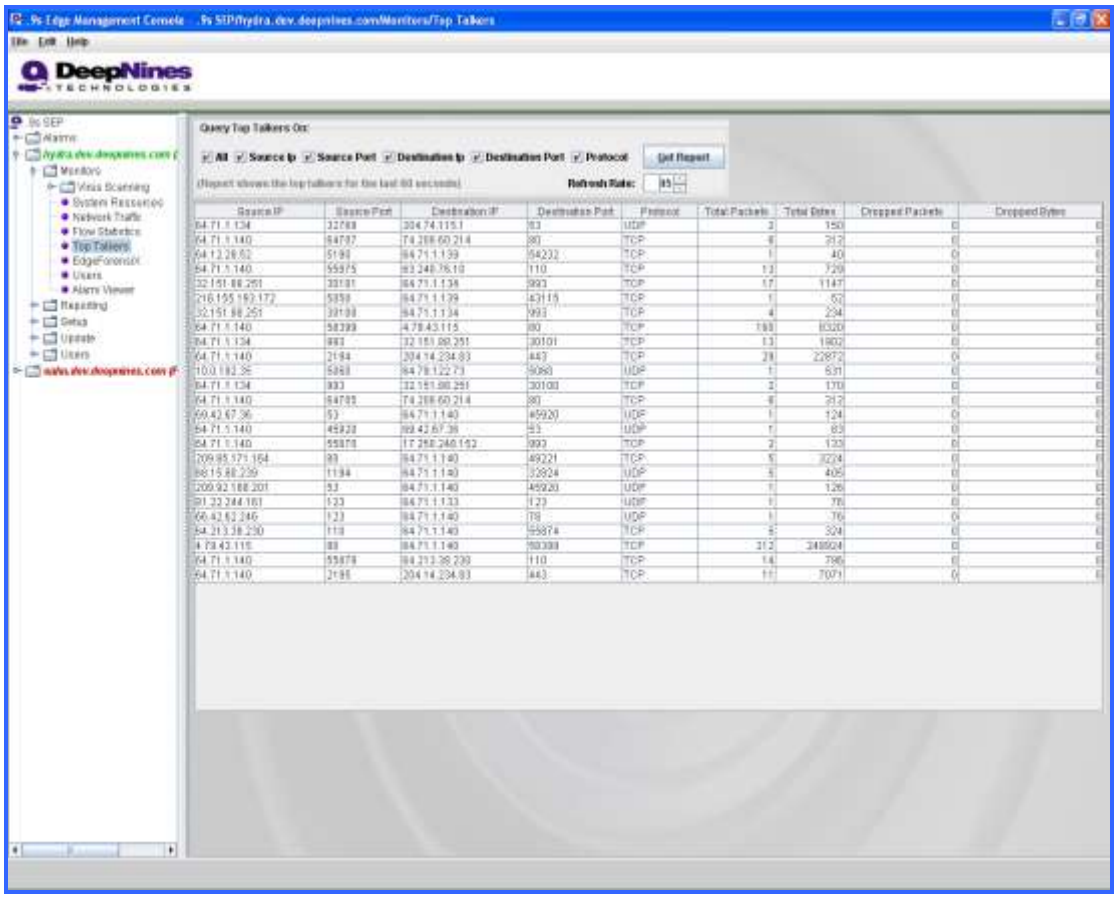


Figure 6-7. Top Talkers Display

Sorting top talker information can be done by selecting or pressing the information header of that particular column. The listed information is displayed as follows:

Source IP
Source Port
Destination IP
Destination Port
Protocol
Total Packets
Total Bytes
Dropped Packets
Dropped Bytes

6.2.5 Edge ForensiX

The Edge ForensiX display (Figure 6-8) allows you to see the EFX host that the SEP is connected to, the number of offloads that have been captured from the SEP and sent to the EFX database, the last offload rate, average offload rate and the average capture rate. Additionally, there are real-time graphs that show the actual offload rate and capture rate. For additional information on the Edge ForensiX, refer to the *"EFX Users Guide".*

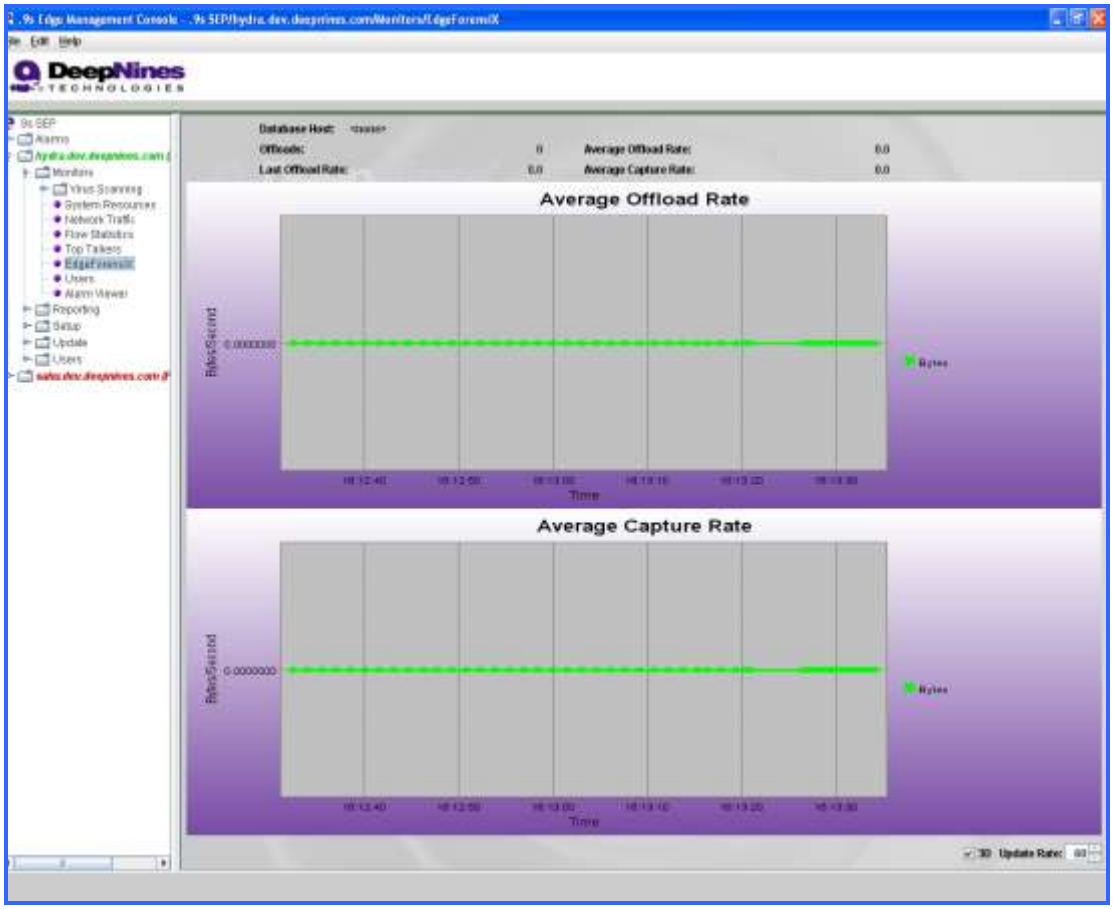


Figure 6-8. Edge ForensiX Display

6.2.6 Users

The User display (Figure 6-9) shows users currently logged onto the SEP.

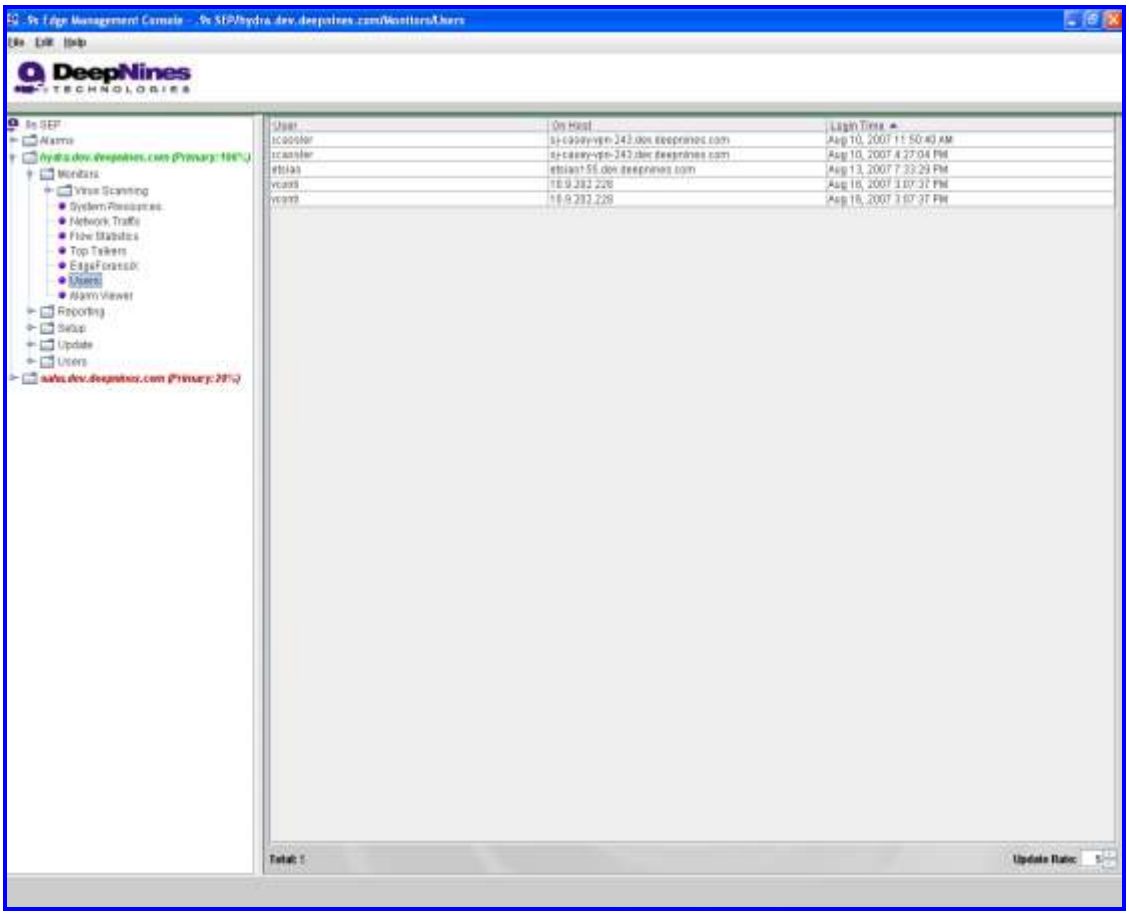


Figure 6-9. Users Display

6.2.7 Alarm Viewer

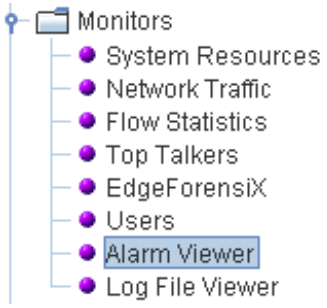
There are numerous places in the Management Console to view alarms that are generated by the SEP. The alarms can be viewed in both the Monitors section and the top Tree View of the EMC. Each is explained below in detail.

NOTE

You must have alarms enabled within the Alarm Delivery section of the Set-up folder to view alarms within the EMC. By default all alarms are enabled to be viewable in the EMC.

In Monitors

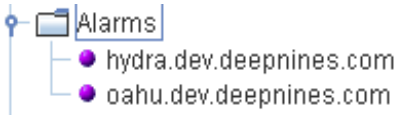
To view alarms in the Monitors section of the EMC, navigate to the Alarm Viewer section of the Monitors folder as shown below.



As alarms are generated they will be viewable in this window. If clearing the alarms is desired, select <CLEAR> from the bottom right. This will clear the field and start inserting any new alarms.

In Top Tree View

To view alarms in the Tree View section of the EMC, navigate to the Alarms section of the Top Tree view that is labeled Alarms as shown below.



As alarms are generated they will be viewable in this window (Figure 6-10). If clearing the alarms is desired, click <CLEAR> from the bottom right. This will clear the field and start inserting any new alarms.

NOTE

If you are logged into more than one SEP then the above alarms explanation will apply to and both SEP's will be viewable from the Top Tree View Alarms folder.

SEP's will be viewable from the Top Tree View Alarms folder.

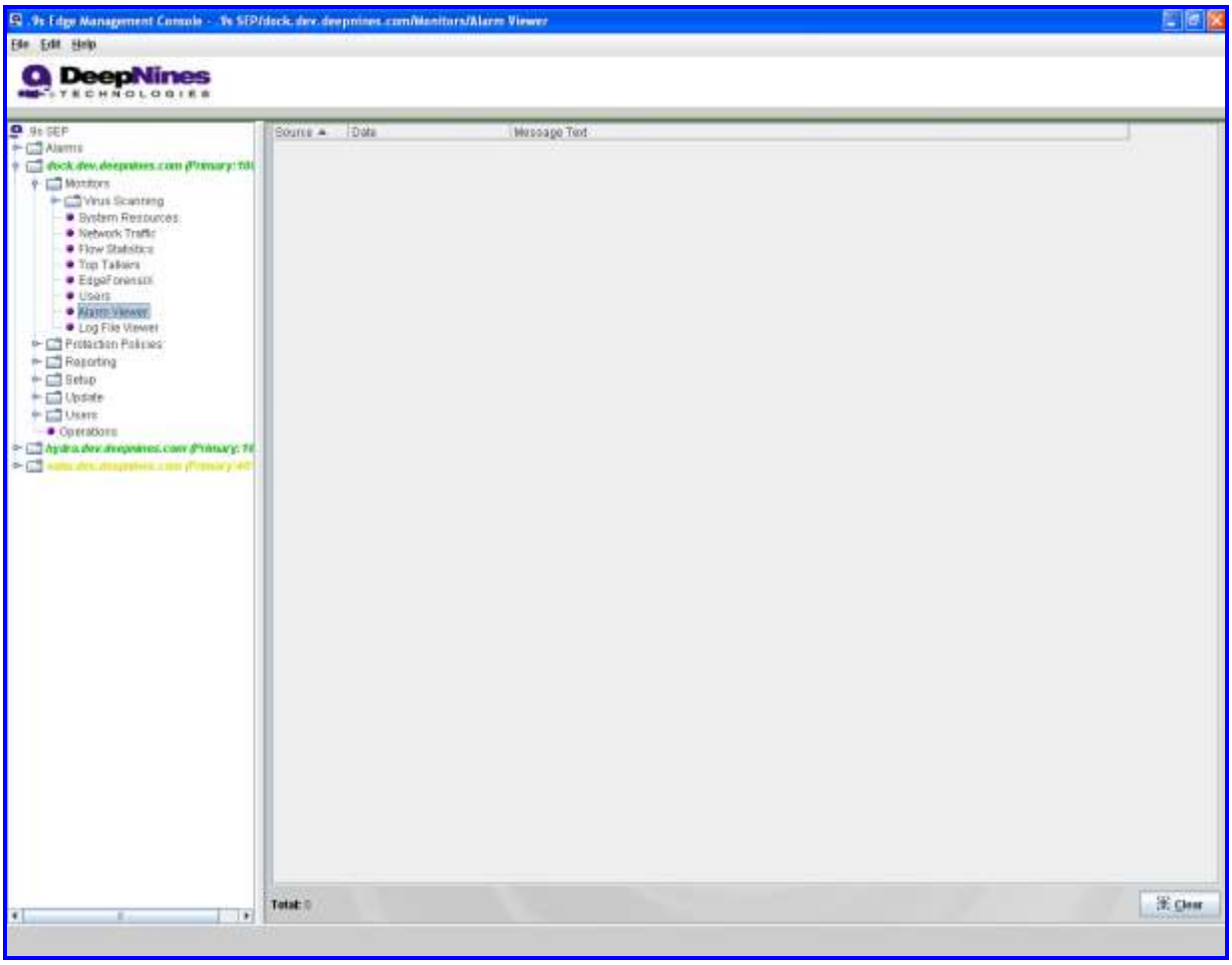


Figure 6-10. Alarm Viewer Display

6.2.8 Log File Viewer

The SEP provides the ability to view SEP logs from within the EMC. Log display is limited to 1 MB. To view the current SEP log file, perform the following:

1. Verify that the unit to view log entries is the active host.
2. Select Log File Viewer from the Monitors folder. The Log Viewing options appear in the Action pane (Figure 6-11).
3. Select a date/time range for the log entries to be displayed and click **<OK>**.
4. SEP displays log entries for the time interval you specified. If the specified time interval has more entries than fit in the 1 MB limit, the output begins with the most recent entry within the time interval and truncates later entries. If output is truncated, select a smaller time interval.
5. (Optional) Activate the Word Wrap checkbox to display the log entries within the bounds of the current window. Clear the checkbox to display log entries on a single line.
3. (Optional) Click **<COPY>** to Clipboard to copy all displayed log entries. Copied entries are in plain text format and may be pasted into any application.

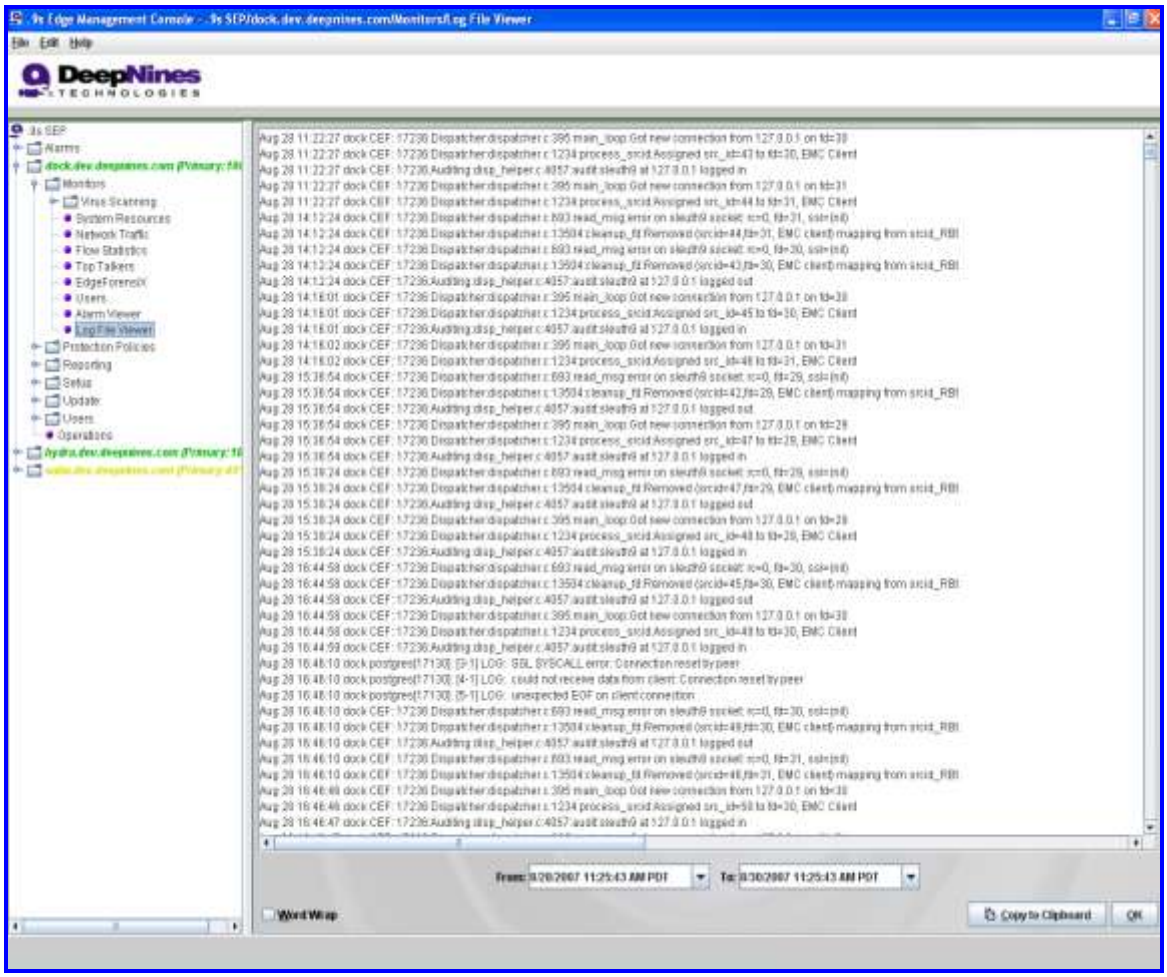
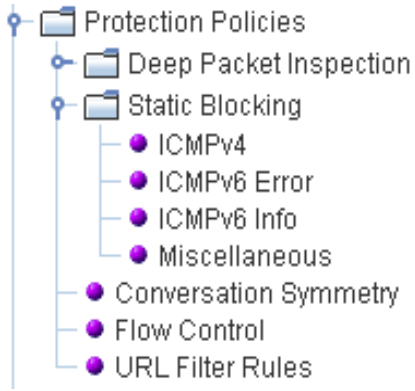


Figure 6-11. Log File Display

6.3 Protection Policies

The Protection Policies section of the Command Explorer provides configuration options for Deep Packet Inspections, Static Blocking, Conversation Symmetry, Flow Control and URL Filter Categories Actions.



6.3.1 Deep Packet Inspection

Deep Packet Inspection provides another layer of inspection for a variety of intrusions. Deep Packet Inspections is disabled on each flow specifier by default. You have the option to enable it for each flow control. Once enabled, you can disable it again if needed. Before using the Deepnines Deep Packet Inspection engine, refer to Appendix A, *"DPI Rules"* for a short tutorial on the rules, and structure of the rules.

6.3.1.1 Actions

DPI categories can be globally enabled or disabled along with altering the logging of enabled categories.

To ignore, enable, enable with logging, or logging only on signature categories, perform the following:

1. Select by clicking >Deep Packet Inspection>Actions from the Protection Policies folder. The Actions Display is displayed (Figure 6-12).
2. Highlight desired classification if you wish to change action.
3. Select type of action from the Action pull-down menu.
4. Click **<SAVE>** to save the results or click **<RESET>** to cancel the changes.

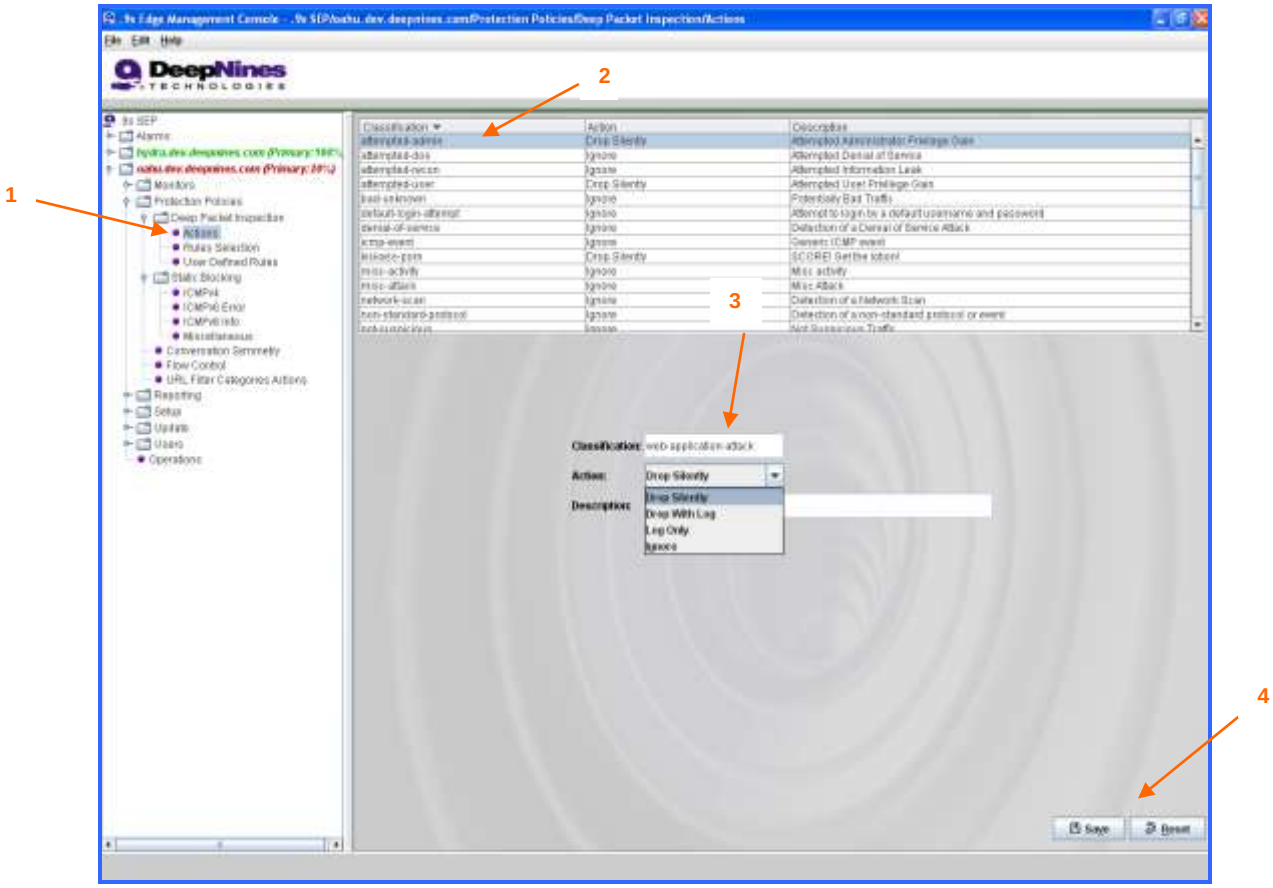


Figure 6-12. Deep Packet Inspections – Actions Display

The Action category classifications are listed in Table 6-6.

Drop Silently	Signature is enabled, but no logging of the triggered signature is written to disk. Alert will be seen in the reporting database.
Drop With Log	Signature classification is enabled and signature logging is enabled. Alert will be seen in the reporting database.
Log Only	Signature blocking is disabled but event is still written to the logs. Alert will be seen in the reporting database.
Ignore	Ignores the classification completely with no logging of signature events. Alert will not be visible in the reporting database.

Table 6-6. Category Classifications

If the administrator is going to be looking for a specific attack within the log files, the Action setting will need to be set to Drop With Log, otherwise Deepnines recommends that DPI Actions be set to Drop Silently when blocking is desired. This will allow the administrator to still view the alert in the reports and assist in conserving processing capabilities.

6.3.1.2 Rules Selection

DPI Rules selection contains general groups of rules associated by type. If expanded, these individual rules will be visible and can be selected/deselected as desired. Additionally, if the entire group is not wanted, de-selecting the check box associated with that group of rules will disable all rules in that group. There are two tabs on the Rules Selection Display; Rules Selection and Rule Details.

To view active/inactive rules or to select/deselect rule groups in the Rules Selection tab, perform the following:

1. Select by clicking >Deep Packet Inspection>Rules Selection from the Protection Policies folder (Figure 6-13).
2. Select the Rules Selection tab at the top of the menu. Signature groups are listed under the Rule Selection tab.
3. Click on to expand that particular group of rules.
4. Check or uncheck the desired rule.
5. Click **<SAVE>** to save the results or click **<RESET>** to cancel the changes.

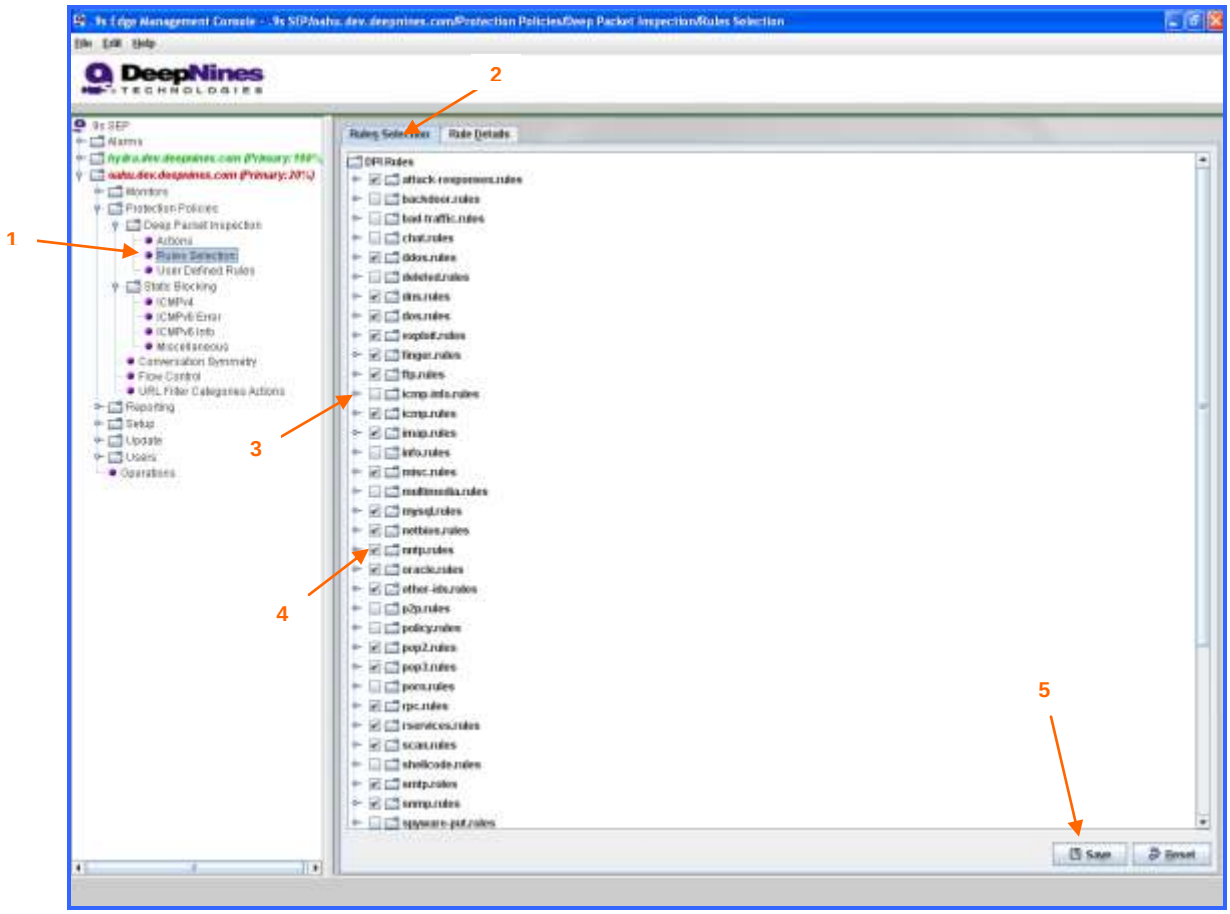


Figure 6-13. Deep Packet Inspections – Rules Selection Display

To view, select and edit rules files in the Rules Details tab, perform the following:

1. Select by clicking >Deep Packet Inspection>Rules Selection from the Protection Policies folder (Figure 6-14).
2. Select the Rules Details tab at the top of the menu.
3. Select a rules file from the drop-down menu to view.
4. Highlight desired alert field in the main body of menu if you wish to change action. The selected edited field is shown in the **"Edit Selected Rule"** field.
5. Select type of action from the Action pull-down menu.
6. Click the **<Add to User Rules>** button.

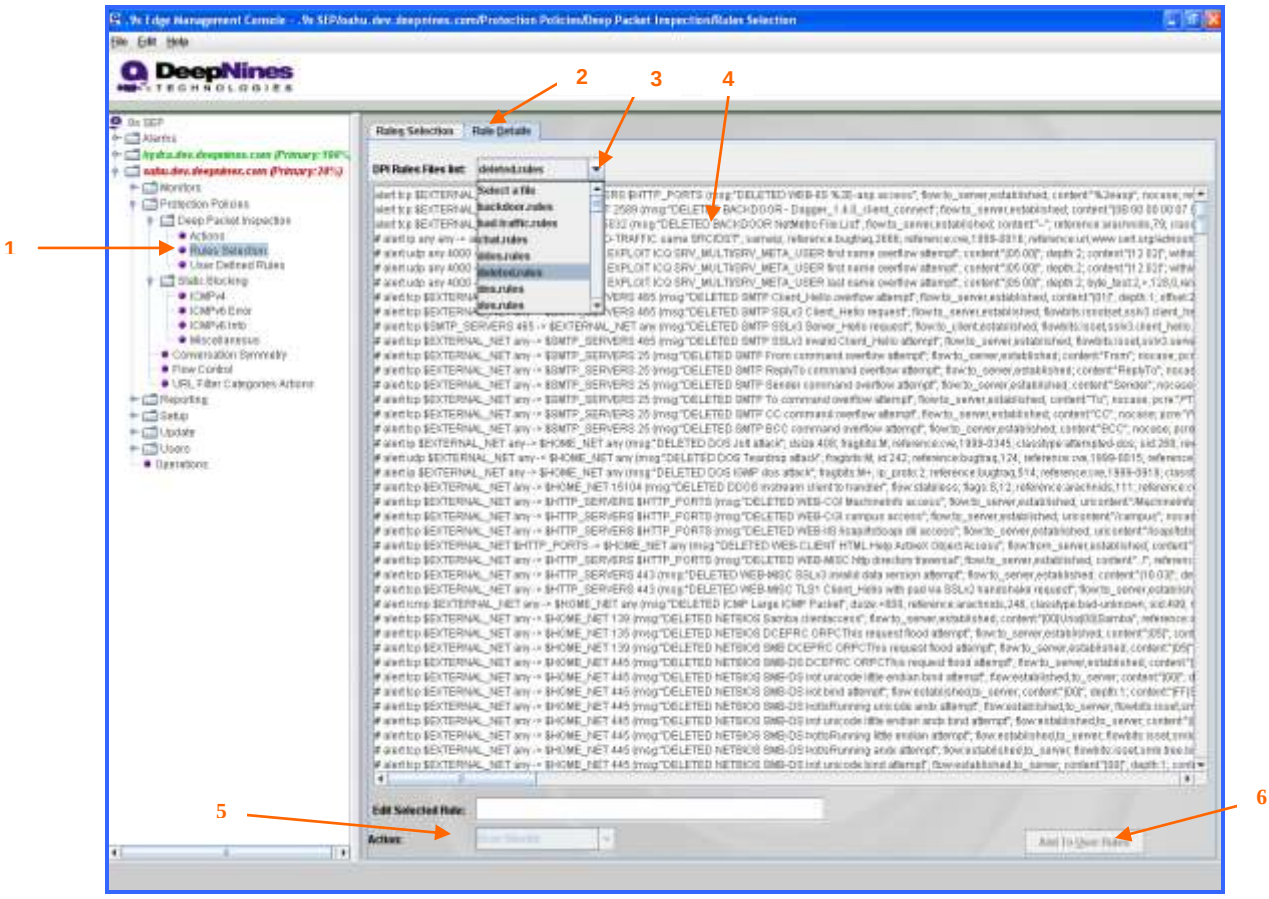


Figure 6-14. Deep Packet Inspections – Rules Details Display

6.3.1.3 User Defined Rules

You can build custom rules or import groups of new rules that are desired. DPI custom rules can be built and added from existing rules as well.

To view, modify or add new custom rules:

1. Select by clicking >Deep Packet Inspection>User Defined Rules from the Protection Policies folder (Figure 6-15).
2. Select the Single tab on top of menu for single rule addition or modification.
3. Click **<New>** to add a new rule.
4. Highlight by clicking on rule to modify an existing User Defined Rule.
5. Make modifications to the rule in the Rule box.
6. Press **<Save>** to save the changes or press **<Reset>** to reverse the changes.

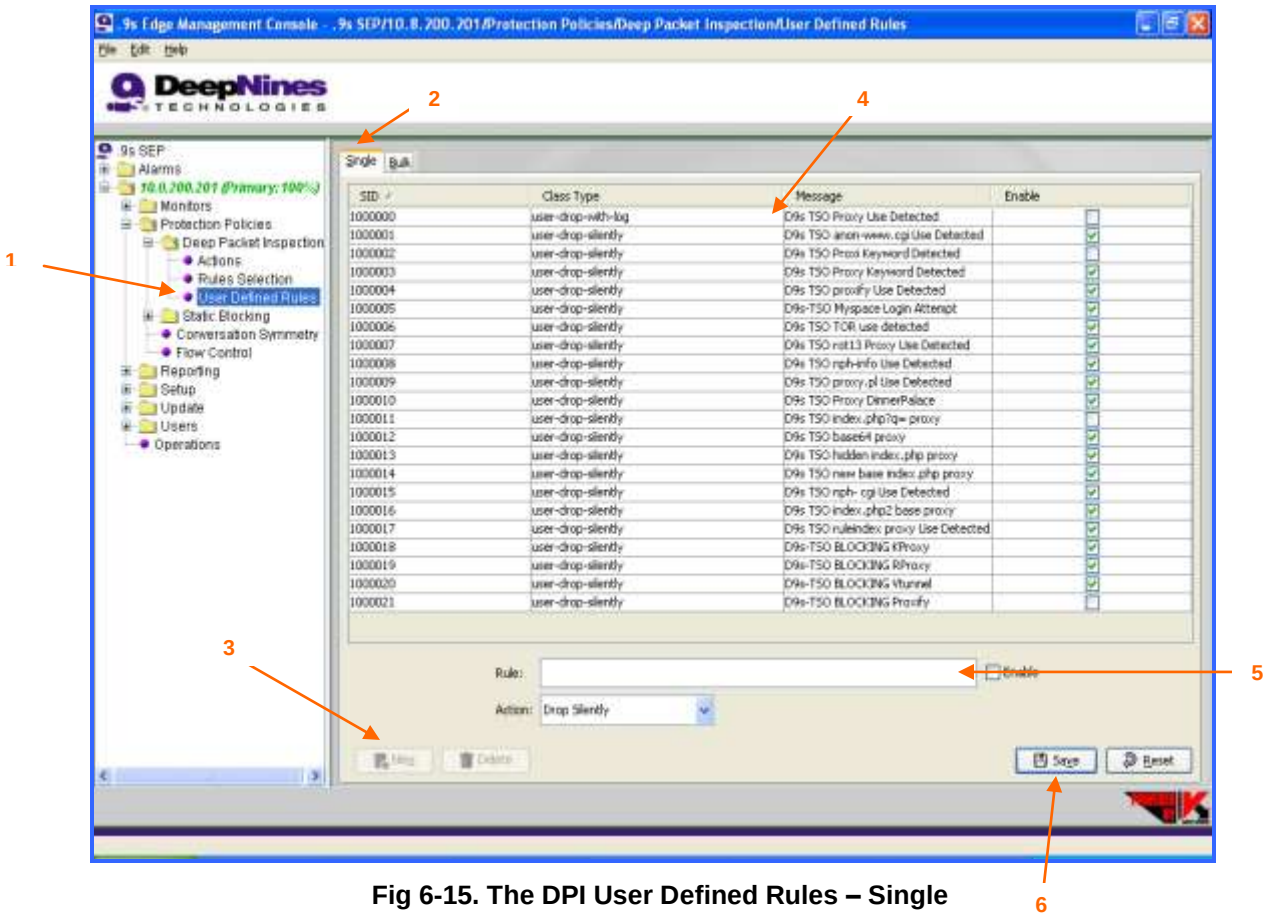


Fig 6-15. The DPI User Defined Rules – Single

NOTE

If minor modifications are desired or if additional rules are wanted with slightly different content, highlight the entire rule in the Rule box, right click with your mouse, select copy. Select <NEW> and then paste the rule into the Rule box. Make modifications, click <ENABLE> and then <SAVE>.

For bulk or multiple rule import from a text file:

1. Select the Bulk tab on top of menu for bulk rule addition or modification (Figure 6-16).
2. Select **<IMPORT>** button (bottom left). A window will pop up asking you to find the location of the text file you wish to import.
3. Input the desired text file in File Name field.
4. Select Open from the pop up window once the desired file is located. The file contents are displayed in the Bulk explorer pane.
5. Click **<SAVE>**.

The newly imported Bulk rules will now be visible in the Single tab as individual User Defined Rules and can be Selected or Deselected as wanted. Newly imported Bulk rules will automatically be enabled for DPI scanning. Single or individual defined rules will have to be enabled at the time of creation or after they have been saved.

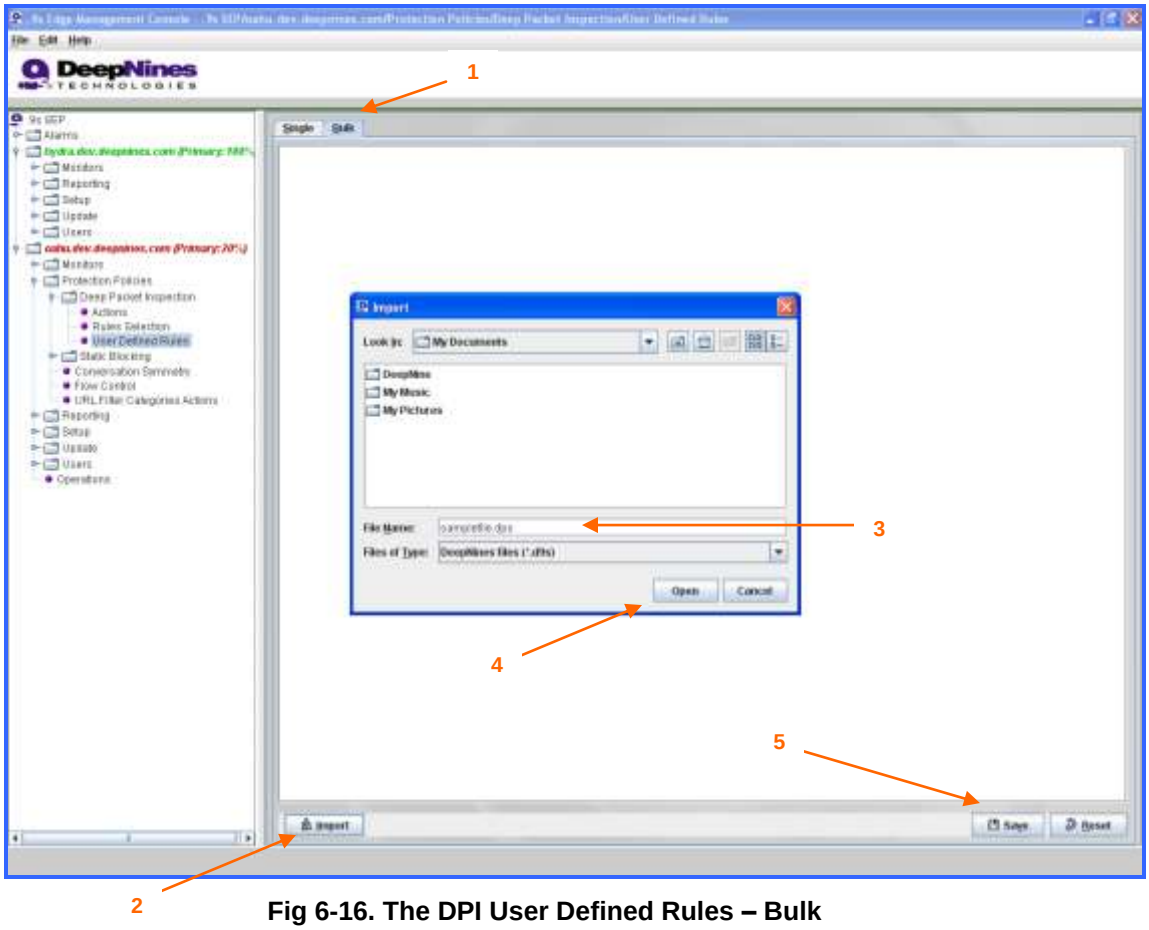


Fig 6-16. The DPI User Defined Rules – Bulk

6.3.2 Static Blocking

Some packet types should always be blocked from entering or leaving your network. SEP automatically and unconditionally blocks the following packet types:

- Packets with identical source and destination addresses
- Packets with invalid header formats
- Packets with broadcast source MAC addresses

Some packet types are useful in special circumstances, but for most networks it is unnecessary traffic. Attackers often use these obscure packets to prepare for, or as the basis of, an attack. By default, SEP automatically blocks most of these message types. You can, however, unblock any of these message types if your network requires them.

For example, SEP automatically blocks multicast message types. However, these message types are used by applications that support video conferencing. If your network supports video conferencing, you must turn off static blocking for these message types.

Configurable static blocking is available for the following message types:

- ICMPv4 Messages
- ICMPv6 Error messages
- ICMPv6 Info messages
- Miscellaneous messages

To configure Static Blocking:

1. Verify that the unit on which to configure static blocking is the active host.
2. Select Static Blocking from the Protection Policies folder.
3. Click the message type to be configured. A list of messages of that type that can be blocked using SEP static blocking appears in the Action pane (Figure 6-17).

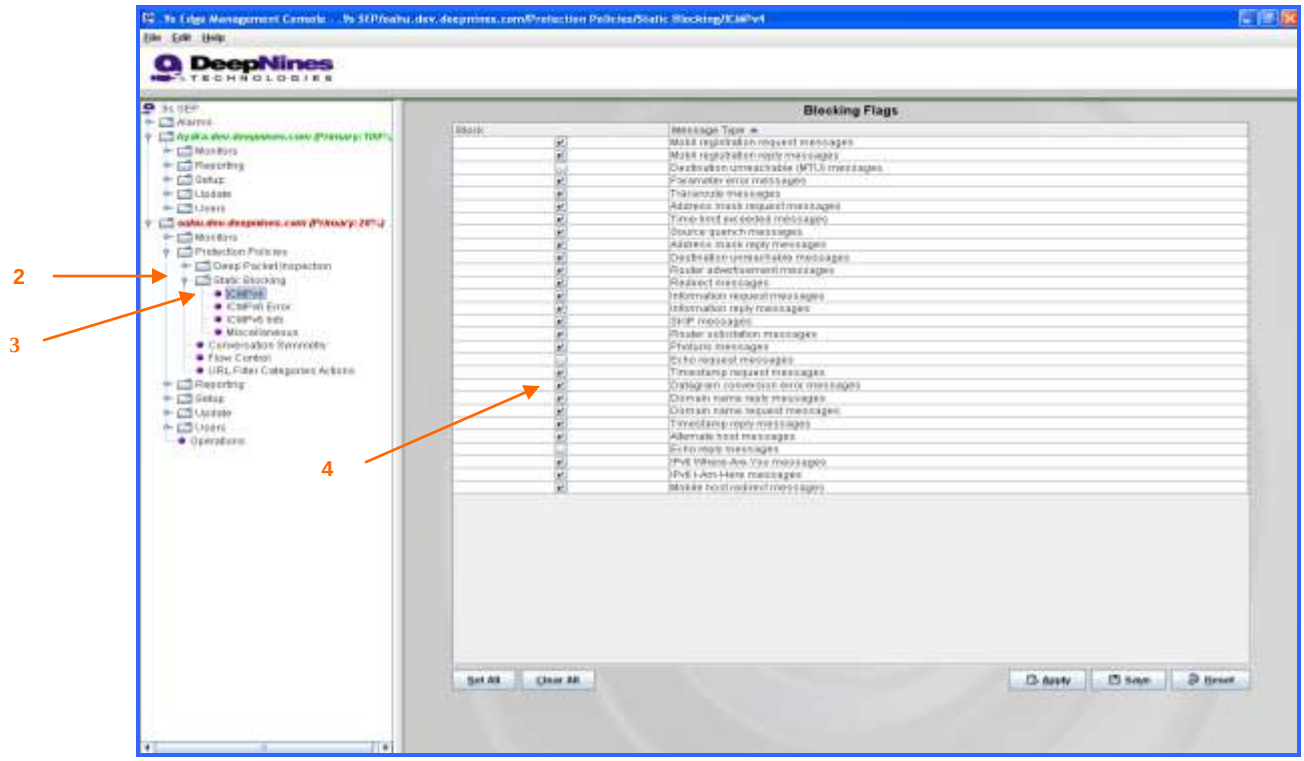


Fig 6-17. Example of Blocking Flags listing for ICMPv4

4. Activate the check box associated with a specific message to unconditionally block the message from entering or leaving the network. Clear the check box to allow the message to pass.

To Set or Clear All:

1. Click **<SET ALL>** to activate all check boxes.
2. Click **<CLEAR ALL>** to clear all check boxes.

Apply one of the following options:

- Click **<SAVE>** to immediately apply your changes to a running system and to maintain the settings until you change them again.
- Click **<APPLY>** to immediately apply your changes to a running system but discard those changes the next time the SEP host is rebooted.
- Click **<RESET>** to discard your changes without applying or saving them.

6.3.2.1 ICMPv4 General Messages

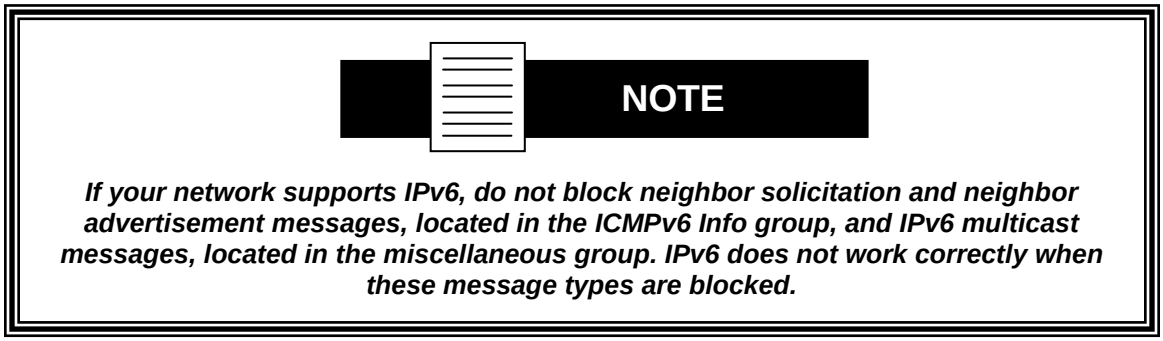
For a listing of additional ICMPv4 message types and explanations, go to:
http://www.iana.org/assignments/icmp-parameters

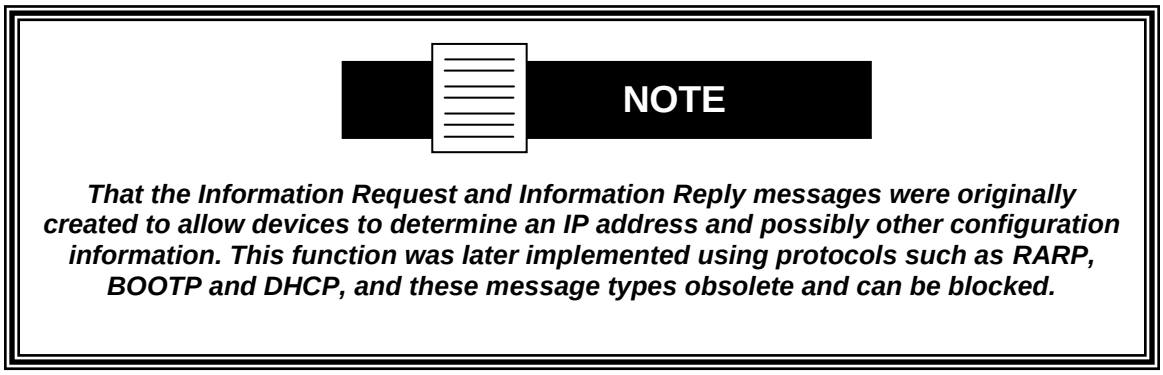
6.3.2.2 ICMPv6 Error and Info Messages

For a listing of additional ICMPv6 error and info message types and explanations, go to:
http://tools.ietf.org/html/draft-ietf-ipngwg-icmp-v3-05

6.3.2.3 Miscellaneous Messages

Miscellaneous Messages include IPv4 broadcast, IPv4 multicast and IPv4 packets with IP header options; IPv6 multicast and IPv6 packets with IP header options; and Packets using Explicit Congestion Notification (ECN).


NOTE
If your network supports IPv6, do not block neighbor solicitation and neighbor advertisement messages, located in the ICMPv6 Info group, and IPv6 multicast messages, located in the miscellaneous group. IPv6 does not work correctly when these message types are blocked.


NOTE
That the Information Request and Information Reply messages were originally created to allow devices to determine an IP address and possibly other configuration information. This function was later implemented using protocols such as RARP, BOOTP and DHCP, and these message types obsolete and can be blocked.

6.3.3 Conversation Symmetry

Conversation Symmetry allows the SEP to provide protection or state-like measures on connectionless traffic. Connectionless protocols have no real beginning and end. Most security appliances will not monitor connectionless protocols. As a result, it is easy for DoS or other types of attacks to be directed at devices that are listening for connectionless protocols i.e., DNS Server.

Conversation Symmetry is designed to insure proper 2-way traffic by controlling the number of requests and responses assigned to a specific protocol. Consequently, TCP and ICMP are not controlled by this function, but provided with their own functions. TCP is always checked for proper behavior to the protocol, including sequence numbers, and most types of ICMP are blocked by default (configurable) except for echo requests/replies and certain destination unreachable messages that are needed for MTU discovery. The controls of the Conversation Symmetry allow you to define how many outgoing packets there can be before a response is seen.

To configure Conversation Symmetry:

1. Select Conversation Symmetry from the Protection Policies folder (Figure 6-18).
2. Click **<NEW>** from menu (bottom left of screen).
3. Select Protocol from pull-down menu.
4. Select desired Conversation Requests (0-65,535).
5. Select desired Conversation Responses 0-65,535).

Apply one of the following options:

- Click **<SAVE>** to immediately apply your changes to a running system and to maintain the settings until you change them again.
- Click **<APPLY>** to immediately apply your changes to a running system but discard those changes the next time the SEP host is rebooted.
- Click **<RESET>** to discard your changes without applying or saving them.

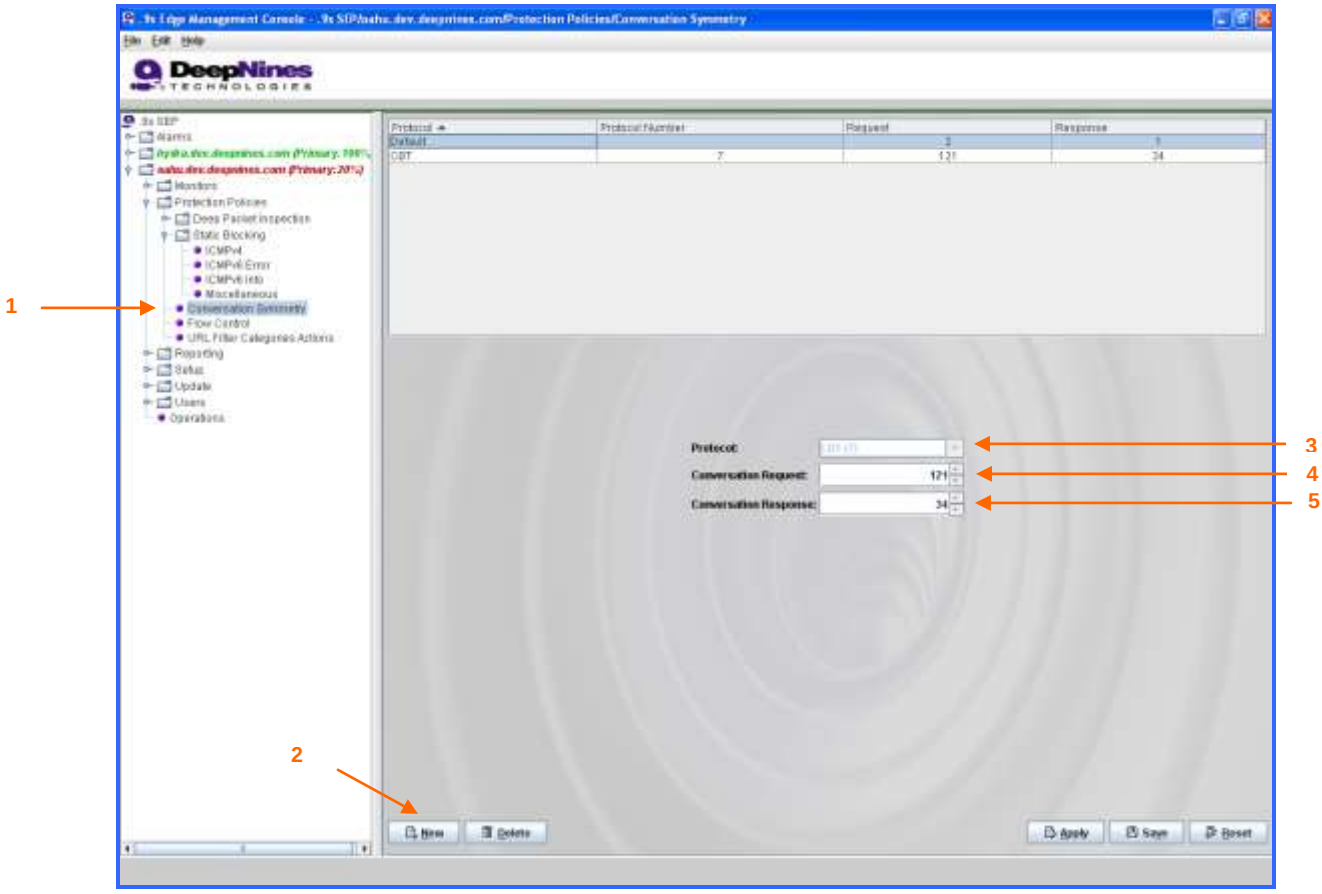


Fig 6-18. Conversion Symmetry Menu

The Action category classifications are listed as follows:

- **Protocol:** This pull-down menu gives a list of the IP Protocols
- **Conversation Request:** This is for incoming requests and can be set from 0 to 65,535
-
- **Conversation Response:** This is for outgoing response and can be set from 0-65,535

6.3.4 Flow Control

Flow specifiers control the flow of traffic through the SEP unit. Using flow specifiers, you can control the type and amount of traffic that enters or leaves your network. Additionally, you can create flow specifiers to control a specific protocol, inside or outside IP address, and/or inside or outside port, specifying an unconditional action (forward or block) or controlling the flow based on connections, packets, or bits per second.

SEP combines the limits you set in a flow specifier combined with the historical analysis of your network traffic to control the flow of traffic through the SEP. This will maximize the flow of good traffic while minimizing the flow of harmful traffic thus preventing network flooding.

Flow specifiers are created to examine and meter any IPv4 or IPv6 packet attempting to cross your network boundaries. To completely protect your network, create a flow specifier to match each packet type that crosses your network boundary.

You may require more than one specifier for a specific packet type i.e., creating one flow specifier to handle all TCP packets crossing your network boundaries and another to handle all TCP traffic entering or leaving via port 25 (SMTP traffic). An SMTP packet would match both flow specifiers. When a packet matches one or more flow specifiers, SEP applies all the actions from the matching flow specifiers to the packet. You can create a flow specifier to apply to a single host or a group of hosts.

Once you create a flow specifier, the name field cannot be changed. However the rule contents can be modified, saved and applied in real time.

6.3.4.1 Pre-Configured Flow Specifiers

The SEP system provides the following pre-configured flow specifiers:

Default Policy

The Default Policy flow specifier controls all packets that match no other flow specifier. This flow specifier cannot be deleted. The matching fields of this flow specifier cannot be modified but the control fields can be modified. The Default Policy is set to forward by default.

ARP/RARP

The ARP/RARP flow specifier controls all Address Resolution Protocol and Reverse Address Resolution Protocol packets. This flow specifier cannot be deleted. The matching fields of this flow specifier cannot be modified. The control fields of this flow specifier are user configurable. The ARP/RARP policy is set to forward by default.

ForensiX Capture cannot include the packet body for ARP/RARP. Selecting both MAC Header and Protocol Headers captures the entire packet.

OVERLOAD

The OVERLOAD flow specifier is only used for counting. It has no controls and does not do any blocking. It is used to count packets that are dropped because the flow table has many entries. Since there are more than 1.5 million flow table entries, the possibility of some kind of attack is certain. But not all packets are dropped in this case. The number of drops increases as the number of flow table entries increases toward 3 million.

It should be the case that the number of dropped flows and the number of dropped packets is identical, because the dropping happens before a flow table entry is created. Additionally, only hosts with an Unknown state are blocked. These are hosts that have not successfully opened a TCP conversation, which is also typical of an attack. This means that internal users should not be blocked once they have been able to access any external site. If a flow table is too full, packets are dropped without creating new flow table entries. This usually only occurs during an attack.

Fragments

Packets transmitted over the Internet are rarely fragmented. In general, packet fragmentation only occurs when a packet is too large to be sent over a particular network segment or link in its entirety i.e., when a packet that originated on a T1 connection must be transmitted over a dial-up connection. Modern businesses with T1 connections or better will rarely, if ever, receive fragmented packets. So if a fragmented packet arrives, it is immediately a suspect.

The Fragments flow specifier controls all packet fragments, regardless of protocol, and maintains statistics on fragmented packets. The purpose of this flow specifier is to collect information on fragmented packets for forensic capture and system monitors.

Fragmentation control is managed elsewhere in the system. This flow specifier cannot be deleted. The matching fields of this flow specifier cannot be modified. The control fields of this flow specifier are ignored. A packet may be fragmented into 3 packets and still be allowed to pass by default. There are other checks that occur with fragments that can lead to blocking them such as order of arrival, overlap size, etc.

Malformed

The Malformed flow specifier controls all packets with invalid data that cannot be matched to any other flow specifier, for example a packet that is shorter than the minimum packet length. The purpose of this flow specifier is to collect information on malformed packets for forensic capture and system monitors. Malformed packet control is managed elsewhere in the system. This flow specifier cannot be deleted. The matching fields of this flow specifier cannot be modified. The control fields of this flow specifier are ignored.

Edge ForensiX capture cannot include the protocol headers for Malformed Packets.

ICMP

The ICMP flow specifier controls all ICMP packets that are not specifically blocked by the system's static blocking rules. By default, it set to forward. The matching fields of this flow specifier can be modified. The control fields of this flow specifier may be modified.

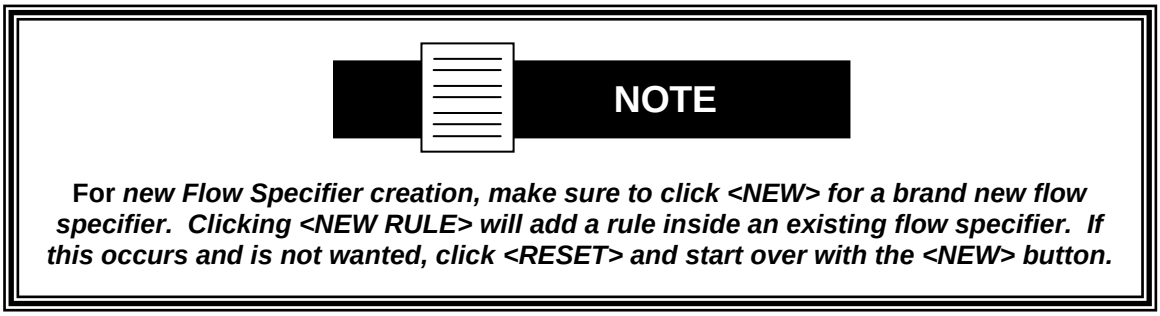
6.3.4.2 Creating and Maintaining Flow Specifiers

You can create as many flow specifiers as necessary to control the traffic that enters and leaves your network. You will need to create a flow specifier for each protocol to be allowed into the network. The Default flow specifier controls all traffic that does not match any other flow specifier or is unwanted on the network.

You can create flow specifiers to match any number of specific criteria, including inside or outside port and/or inside or outside IP address (including net mask). If traffic passing through SEP matches more than one flow specifier, SEP selects the disposition that provides the most aggressive network protection.

To create, modify or delete a Flow Specifier (Figure 6-19):

1. Select Flow Control from the Protection Policies folder.
2. Select **<NEW>** to create a new Flow Specification.



3. Enter the Name of the flow specifier. The name can be anything, however it is best to name it something that pertains to the flow specifier you are creating i.e., if you want to monitor/control the outgoing SMTP email traffic, then the name of the flow specifier could be ‘SMTP outbound’.
4. Adjust the horizontal splitter on menu to view all of table and data view. Continue reading the sections below to fill in the rest of the desired information (Refer to Figure 6-19).

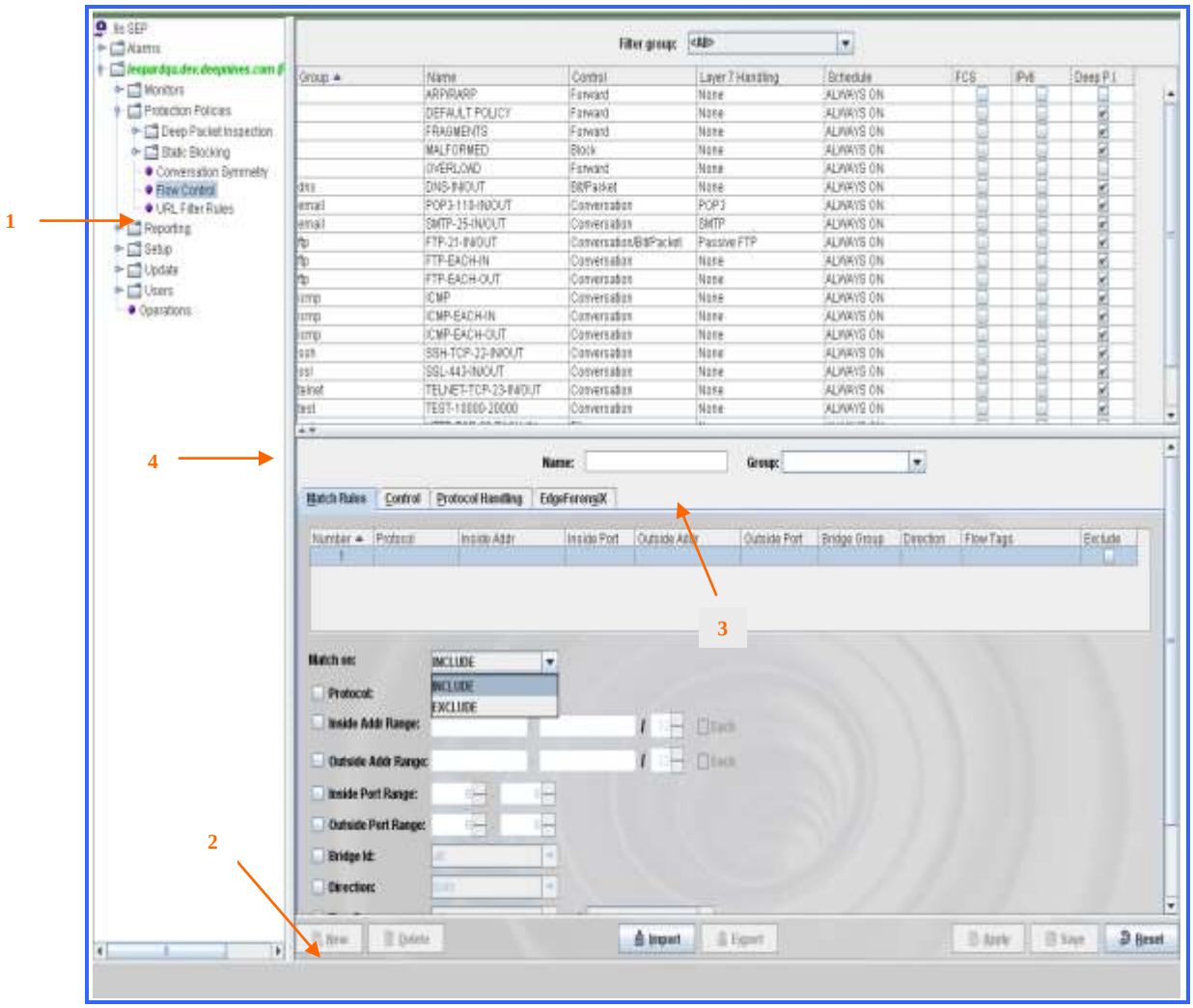


Fig 6-19. Flow Control Menu

Match Rules

Match rules is a general term for the rule or rules that will select traffic to which a flow specifier will apply. For example, you make a flow specifier called SMTP outbound and there are two email servers in the DMZ that email should always go to. Then you would create one match rule using the IP address of one of the email servers and then add a second match rule for the second email server's IP address.

NOTE

It is very important that you make certain as to not save a flow specifier with a match rule that is completely empty. If so, it will match all traffic which is usually not intended.

Group Naming

If you desire to assign this Flow Specifier to a group name then enter the desired group name into the Group field. This will allow you to view all of the Flow Specifier that pertain to that group by selecting the Filter Group drop down menu (top center of pane) and selecting the desired group.

Grouping is primarily used when large numbers of Flow Specifier volumes are created so that one can find the desired rule more quickly.

Defining Protocols

To define a particular protocol for the Flow Specifier that is being created; check the box next to protocol. The drop down menu will now be active and can be scrolled through to find the desired protocol. It will default to TCP (6).

If the protocol number is known, one can enter that protocol number into the field and then press Tab. The SEP will automatically look it up and display the corresponding protocol name and number.

Defining IP Addresses

To define a particular IP address, Source or Destination, check the box next to the Inside or Outside Address field. This field will now become active and the desired IP address can be entered into the field.

The subnet mask will default to a /32 (single IP address). If a range is desired, enter the IP address range and then change the corresponding subnet mask. For example, a Class C needs to be defined for 10.8.200.0. The subnet mask would need to change from /32 to a /24.

Include

If Include is selected, the match rule is normal.

Exclude

If Exclude is selected, the match rule causes any matching flow to be excluded from control by the flow spec, even if it would otherwise match.

Defining Each

The Each feature that is within the Flow Specifier is applied to the Outside and Inside IP addresses only, primarily because it will pertain to each individual IP address. For example:

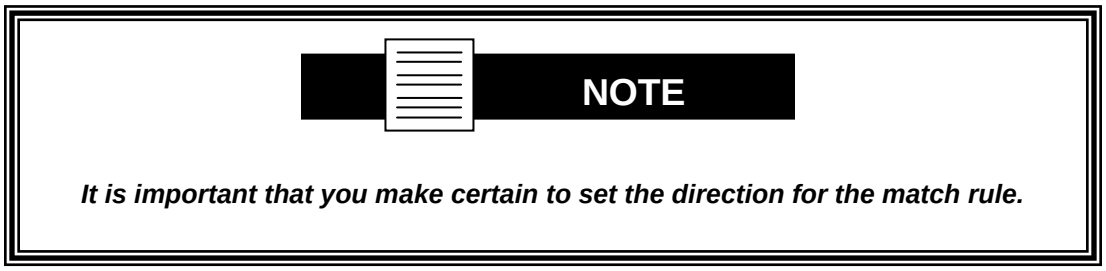
The Administrator has created a rule for incoming HTTP traffic and has set the control to 5Mbps of bandwidth and DPI. It is almost impossible to know what outside IP addresses will be visiting your website but the way the rule is set up one of those IP addresses can flood you with at least 5Mbps of traffic before action would be taken (unless it is an attack picked up by DPI). However, if the administrator wanted to protect the web server from such traffic, one could enable the each feature and then bring down the bandwidth control that is desired from each host. The administrator now sets the bandwidth from 5Mbps to 500Kbps. Each host coming into the network would be allowed 500Kbps of bandwidth.

The each feature ensures that not one individual user on the network will consume all of the available bandwidth, whether it be good or bad traffic.

Defining Ports

Defining ports for the Flow Specifier can be accomplished by check the box next to the desired port. The port can be entered by itself or in a range form. If only a single port is desired, enter the port number in the first field and then click the mouse on the second field. It will automatically populate with the same port number.

If a port range is desired, enter the starting port number in the first field and then the end of the port range in the last field.



Defining Bridge ID

Bridge ID can be defined only if the SEP is residing on a VLAN trunk and per VLAN group policy is desired. Checking the box next to Bridge ID can enable Bridge ID. The pull down menu will now be active. Pulling the down the menu will show all of the VLAN IDs that the SEP has seen. The administrator can select the appropriate Bridge ID that this rule will apply to.

Defining Directionality

Defining Direction for the Flow Specifier provides another layer of protection from hackers and attackers by defining where the flow is going to be originating from. For example: If the Flow Specifier is created for HTTP outbound traffic; Protocol would be TCP (6), Outside port number would be 80, direction would be set to ‘FROM INSIDE’. The session will start on the inside of the network and go out to the Internet.

Applying a Match Rules

If putting two flow tags in a single rule, both must match. If matching multiple flow tags separately is desired, then a separate match rule must be created for each flow tag. Once all of the criteria for the Match Rule have been defined, the administrator can apply it to the Flow Specifier by pressing the Update button (Refer to Figure 6-20).

Multiple Match Rule

If additional rules are desired within the Flow Specifier:

1. After the Update button has been pressed, click **<NEW RULE>**.
2. Define the Protocol, IP addresses and ports.
3. Click **<UPDATE>** to apply to the Flow Specifier.

If no additional rules are desired for the Flow Specifier, Click on the Control tab (middle of the pane) and read below for applying control.

Control

The control portion of the Flow Specifier defines how the matched traffic is going to be treated if it is seen on the network; traversing the SEP. Numerous control methods are listed as follows (Table 6-7):

Action – Block	All of the traffic matching the Flow Specifier will be blocked.
Action – Forward	All of the traffic matching the Flow Specifier will be forwarded and not controlled. This should not be used if at all possible.
Conversation	The defined number will control new conversations.
Bit	The defined number will control the total bit rate per second.
Packet	The defined number will control total packets per second.

Table 6-7. Flow Specifier Control Methods

To block the traffic for the Flow Specifier:

1. Check the action box. The drop down menu will become active.
2. Pull down the menu and select block.

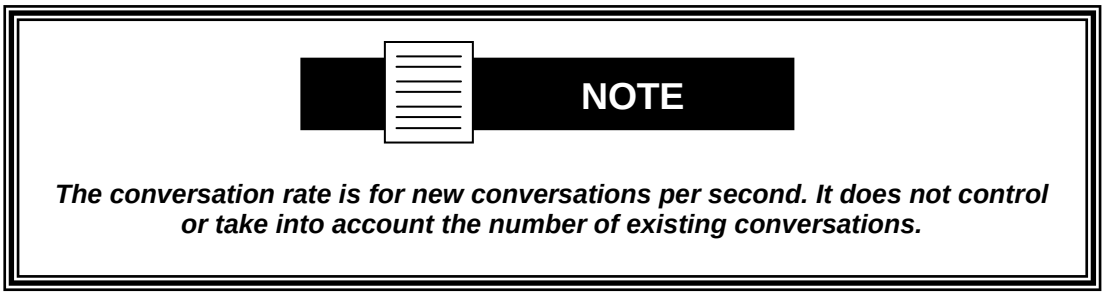
To forward the traffic for the Flow Specifier:

1. Check the action box. The drop down menu will become active.
2. Pull down the menu and select **<Forward>**.

When in forwarding mode, there is minimal checking that is occurring and attacks or other unwanted traffic could pass into or out of the network. Additionally, DPI will not be active on the Flow Specifier when forward is selected.

To control the flow of traffic for the Flow Specifier by Conversation rate:

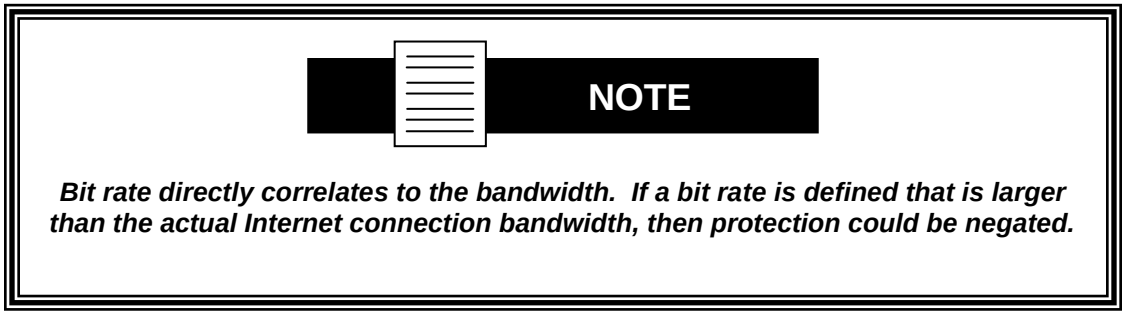
1. Check the Conversation box. The conversation field below will become active.
2. Enter an amount of new conversations per second for the Flow Specifier.
3. If unsure of the correct number set the number to a high rate and then read the Control Options section of this manual.


NOTE
The conversation rate is for new conversations per second. It does not control or take into account the number of existing conversations.

To control the flow of traffic for the Flow Specifier by bit rate per second:

1. Check the Bit box. The bit field below will become active.
4. Enter the bit volume amount for the Flow Specifier.
5. If unsure of the correct number set the number to a high rate and refer to the Control Options as listed.

Reference
1,000,000 bits = 1Mpbs
500,000 bits = 500Kbps


NOTE
Bit rate directly correlates to the bandwidth. If a bit rate is defined that is larger than the actual Internet connection bandwidth, then protection could be negated.

To control the flow of traffic for the Flow Specifier by packet rate per second:

1. Check the Packet box. The packet field below will become active.
2. Enter the packet volume per second for the Flow Specifier.
3. If unsure of the correct number set the number to a high rate and then read the Control Options section below.

The Control fields; Conversation, Bit and Packet can be set if desired. It is important to note that if only the Conversation field is used and the connection is under the limit, no other rate control will apply to this Flow Specifier. It is generally a good idea to use both Conversation Rate and Bit rate.

Control Options

There are numerous control options for Conversation, Bit and Packet rate settings. The control options allow a rate limit to be set to only monitor the rate, rate events (alert only), Control or Control and Rate events (alert) (Table 6-8). The control options are listed as follows:

Monitor	The monitors of the Flow Specifier will be viewable in the Monitors>Flow Statistics section. The flow will not be controlled.
Rate Events Only	There will be an alert message generated when the set limit is met and the Flow Statistics will be viewable.
Control Only	The traffic will be controlled if limits are met without alerting.
Control + Rate Events	The traffic will be controlled if limits are met and an alert will be issued.

Table 6-8. Control Options

When either the Monitor or Rate Events Only is selected, there is no control on the flow. If the traffic matches another Flow Specifier, the matching Flow Specifier will control it. Upon applying or saving these control options, a pop up window will be shown reiterating this message.

To change the control options for a Flow Specifier:

1. Ensure that the Control Tab of the Flow Control section is viewable.
2. Ensure that at least one, Conversation, Bit or Packet rate check box is enabled.
3. Assign a value to the corresponding field, ex. 1,000,000 bits for Bit Rate control.
4. To the right of the input field, pull down the drop down menu.
5. Select the desired Control Option.

Enabling DPI

To enable Deep Packet Inspection for the Flow Specifier:

1. Check the DPI box below the control fields to enable DPI.
2. Uncheck the DPI box to disable DPI for the Flow Specifier.

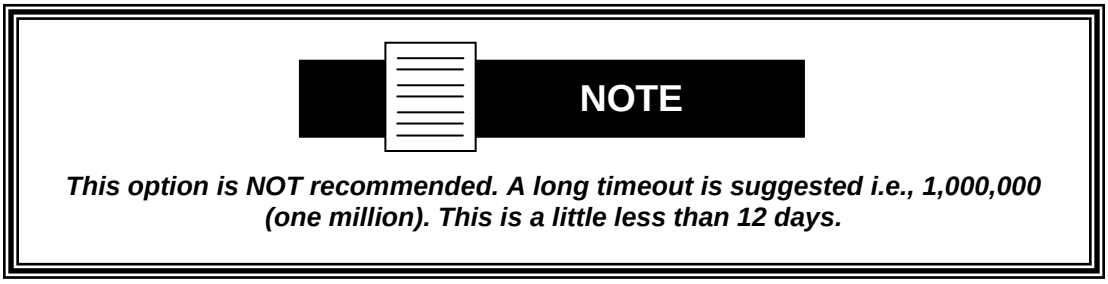
There must be a control of conversation, bit or packet rate set to enable DPI scanning on the traffic within the Flow Specifier.

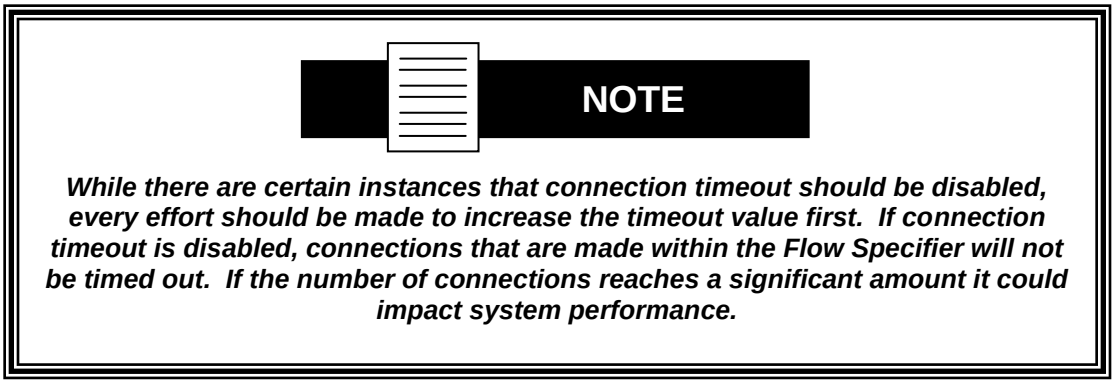
Connection Timeout

Connection Timeout will take out any conversation that has been left open and has had no activity for 5 minutes (300 seconds). The settings on the connection timeout are set to 300 seconds by default.

To change or disable connection timeout:

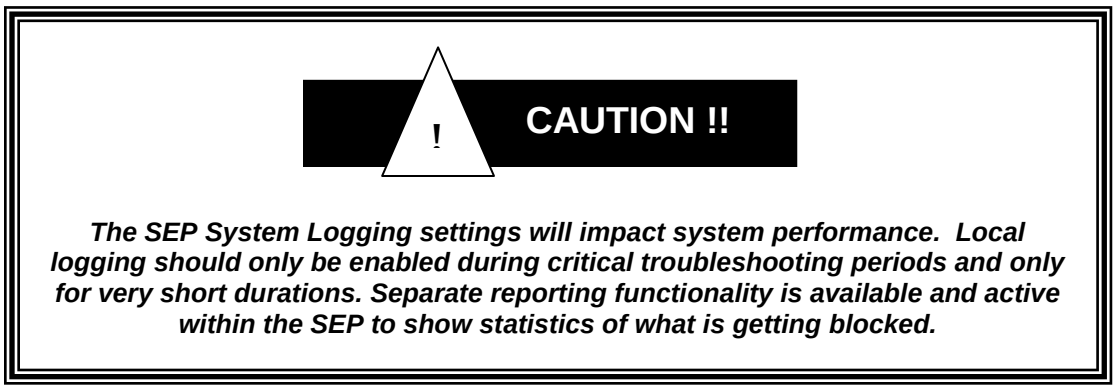
1. Locate the connection timeout settings towards the bottom of the Control tab.
2. Enter a new time, in seconds, for the Flow Specifier to change timeout settings.
3. Uncheck the check box to completely disable connection timeout for the Flow Specifier.




NOTE
While there are certain instances that connection timeout should be disabled, every effort should be made to increase the timeout value first. If connection timeout is disabled, connections that are made within the Flow Specifier will not be timed out. If the number of connections reaches a significant amount it could impact system performance.

System Logging

System Logging is an option that can enable logging on a per Flow Specifier basis. The debug logging will give an administrator an inside view as to the decision to drop a packet or allow it. This logging can be very resource intensive and should only be turned on after a Certified Deepnines Engineer has instructed to do so.


!
CAUTION !!
The SEP System Logging settings will impact system performance. Local logging should only be enabled during critical troubleshooting periods and only for very short durations. Separate reporting functionality is available and active within the SEP to show statistics of what is getting blocked.

Protocol Handling

After completion of the Control Tab, if any protocol handling is desired for the Flow Specifier then the Protocol Handling Tab will need to be set. This will allow an administrator to define further the control methods used by the SEP.

It is important to note that the Protocol Handling Tab should only be accessed if you are defining Flow Specifiers for the following rules. Descriptions and functions are also discussed (Table 6-9).

FTP	Since passive FTP will select a randomly generated Data Channel port after the initial Command Channel is set up (TCP port 21), this setting allows the SEP to monitor the data channel for port numbers and allow the data channel connections to be accepted when it would otherwise be blocked.
SMTP	This will enable SMTP Virus Scanning for the Flow Specifier being defined. At least one of the source or destination ports on the Match Rules tab must be set to port 25 for SMTP Virus Scanning to work.
POP3	This will enable POP3 Virus Scanning for the Flow Specifier being defined. At least one of the source or destination ports on the Match Rules tab must be set to port 110 for POP3 Virus Scanning to work.
HSRP	In general cases, some installations such as HSRP (Hot Stand-by Routing Protocol) will be used by routers, firewalls or switches that the SEP is connected to. This will allow HSRP hello packets to pass properly. Information for setting the correct Flow Specifiers for HSRP can be found below.
RIP	In general cases, RIPv1 and RIPv2 are used by routers that are placed in front of or behind the SEP. Selecting RIP will allow this protocol to work properly. Information for setting the correct Flow Specifiers for RIPv1 and RIPv2 can be found below.
HTTP	When selected, this will enable URL Filter rules and the ability to control URL access based on user groups if you have Deepnines Active Directory User Services installed.
EIQ Redirect	The EIQ Redirect option redirects traffic to the EIQ server for the purpose of remediation. It is automatically configured by EIQ. Users do not need to select or deselect this button.

Table 6-9. Descriptions and Functions

The Flow Specifier for HSRP requires one match rule for each participating router:

For routers outside Sleuth9:

- Set the outside IP address to the real IP address of the outside router, the subnet mask to 32, and the port to 1985.
- Set the inside IP address to the IP for the multicast message (224.0.0.2), the subnet mask to 32, and the port to 1985.

For routers inside Sleuth9:

- Set the outside IP address to the IP for the multicast message (224.0.0.2), the subnet mask to 32, and the port to 1985.
- Set the inside IP address to the real IP address of the inside router, the subnet mask to 32, and the port to 1985.

The Flow Specifier for RIPv1 requires one match rule per router:

For the outside router(s):

- Set the outside IP address to the IP address of the outside router, the subnet mask to 32, and leave the port blank.
- Set the inside IP address to the IP subnet for the broadcast message (e.g.x.x.x.0), the subnet mask to 24, and the port to 520.

For the inside router(s):

- Set the outside IP address to the IP subnet for the broadcast message (e.g.,x.x.x.0), the subnet mask to 24, and the port to 520.
- Set the inside IP address to the IP address of the inside router, the subnet mask to 32, and leave the port blank.

Configuring a Sleuth9 Perimeter Platform positioned between two RIPv2 routers requires two match rules per router:

The first match rule should be configured exactly as the match rule for RIPv1 is configured (see the previous section).
For the second match rule for the outside router(s):

- Set the outside IP address to the IP address of the outside router, the subnet mask to 32, and the port to 520.
- Set the inside IP address to address for the multicast message (224.0.0.9), the subnet mask to 32, and the port to 520.

For the second match rule for the inside router(s):

- Set the outside IP address to the address for the multicast message (224.0.0.9), the subnet mask to 32, and the port to 520
- Set the inside IP address to the IP address of the inside router, the subnet mask to 32, and the port to 520.

Edge ForensiX™

The Edge ForensiX tab of the Flow Specifier allows the capture of either protocol headers or the entire payload of the packets matching that flow. This information is stored locally on the SEP in an EFX partition. Once the files reach 32MB in size, they will automatically be transferred to the EFX Database System.

To enable this option, it is required that you have the Edge ForensiX Appliance as well as the SEP. Refer to the *"EFX Users Guide"* for instructions on how to capture packet information.

Saving Flow Specifiers

Once all criteria for the Flow Specifier are defined, the administrator can save or apply the rule to put the Flow Specifier in motion.

To save or apply a Flow Specifier:

1. Click **<SAVE>** to immediately apply your changes to a running system and to maintain the settings until you change them again, or click one of the following:
2. Click **<APPLY>** to immediately apply your changes to a running system but discard those changes the next time the SEP host is restarted.
3. Click **<RESET>** to discard your changes without applying or saving them.

6.3.4.3 Exporting and Importing Flow Specifiers

You may be required to import or export Flow Specifiers. This may include exporting Flow Specifiers for back up purposes, exporting a single Flow Specifier to import it into another SEP or importing Flow Specifiers after performing an upgrade or rebuilding of the system. The options apply as listed:

Individual Flow Specifiers

To export a Flow Specifier:

1. Log in to the SEP host.
2. Select Flow Control from the Protection Policies folder.
3. Highlight the desired Flow Specifier to export.
4. At the bottom middle of the pane select Export.
5. Navigate to the local system folder that you want to save the configuration file to.
6. Name the file as to remember which Flow Specifier it is.
7. Press **<SAVE>**.

To import a Flow Specifier:

1. Log in to the SEP host.
2. Select Flow Control from the Protection Policies folder.
3. At the bottom middle of the pane select Import.
4. Navigate to the local system folder that you want to import the configuration file from.
5. Press **<OPEN>**.
6. Confirm your options to Import the Flow Specifier.

Multiple Flow Specifiers

To export a Group or Multiple Flow Specifiers:

1. Log in to the SEP host.
2. Select Flow Control from the Protection Policies folder.
3. Highlight the desired Flow Specifiers to export by selecting the first one, holding down the SHIFT key and then click on the last one to be exported. Additionally, the SHIFT and up/down arrows can be used.
4. At the bottom middle of the pane select **<EXPORT>**.
5. Navigate to the local system folder that you want to save the configuration file to.
6. Name the file as necessary.
7. Press **<SAVE>**.

To import a Flow Specifier:

1. Log in to the SEP host.
2. Select Flow Control from the Protection Policies folder.
3. At the bottom middle of the pane select Import.
4. Navigate to the local system folder that you want to import the configuration file from.
5. Press **<OPEN>**.
6. Confirm your options to Import the Flow Specifiers. The SEP will confirm your actions for each Flow Specifier in that group. Selecting **<Yes to All>** will import without questions.

6.3.5 URL Filter Rules

URL Filtering controls HTTP traffic by inspecting the URLs being requested. It provides the following:

- Three-layer filtering based on user created admin black and white lists, website categories, and other third-party blacklists
- Regular expression matching for admin black and white lists
- Allow, block and redirect actions for HTTP requests
- Customizable error messages for blocked access
- Automatic updates for content database
- Filtering out of search engine caches
- Gathering for statistics

URL Filter Rules make rules on URL categories per rule set.

To Create a New Ruleset:

1. Log in to the SEP host.
2. Select URL Filter Rules from the Protection Policies folder.
3. Click **<NEW RULESET>** (Figure 6-20). A New Ruleset screen appears.
4. Select desired option from the “Copy From” pull-down menu.
5. Enter the desired name and description for the ruleset in the fields provided and click **<OK>**. The ruleset name will appear in field of pull-down menu at top middle of screen.

To Create New Category-Based Rules:

1. Select and highlight one of pre-set categories listed to edit (Figure 6-21).
2. Select action desired from pull-down menu <**ALLOW> <BLOCK> <REDIRECT>**.

   ALLOW: Selecting this action allows a request.

   BLOCK: Selecting this action allows a block.

   REDIRECT: Selecting this action allows for redirect. Make certain that you specify the complete URL i.e., "http://www.deepnines.com". If you want to redirect www.xyz.com to www.deepnines.com, by entering www.deepnines.com, you will get http://www.xyz.com/www.deepnines.com and not http://www.deepnines.com .
3. Place check mark in Log Enabled box to allow logging of all activity
4. Click **<SAVE>**.

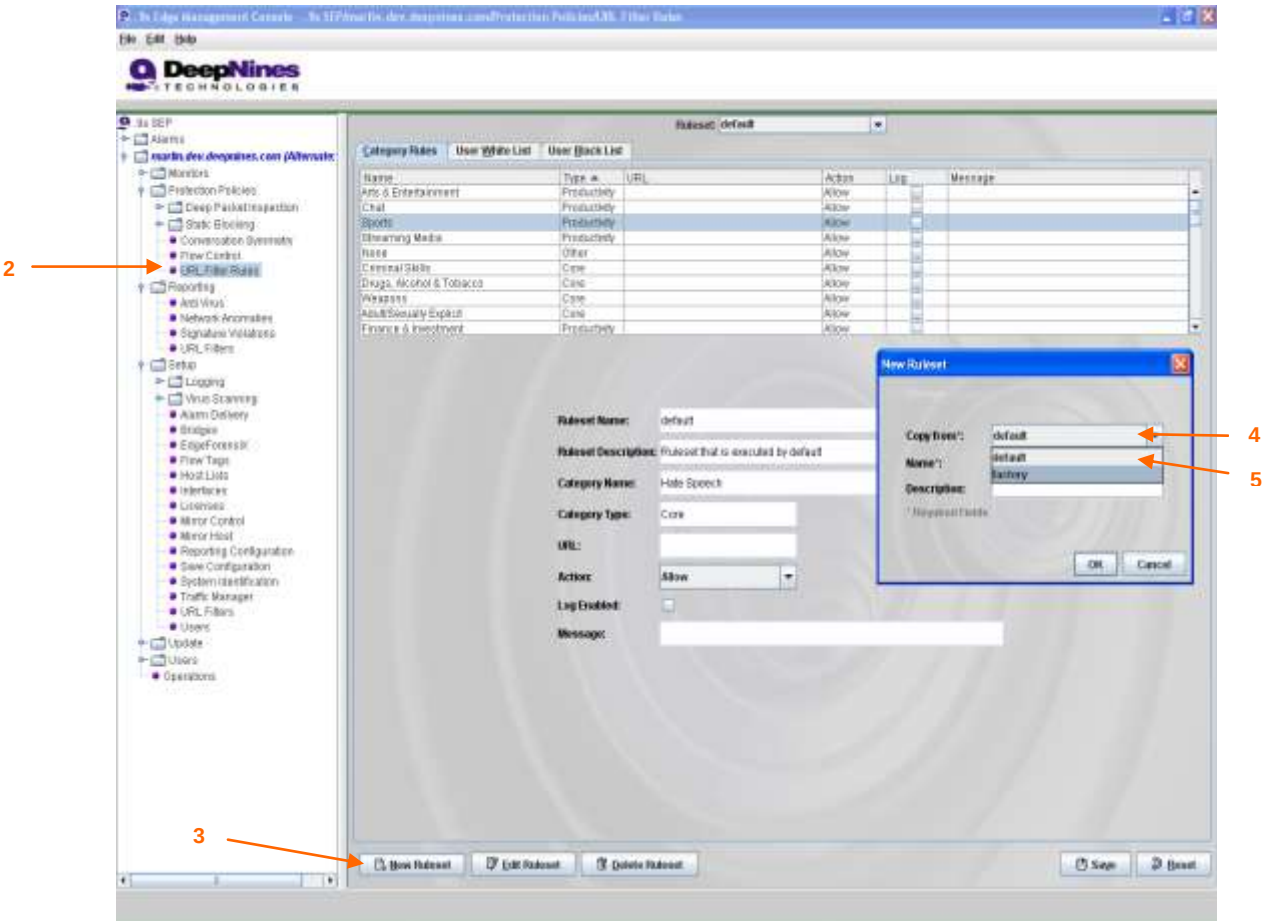


Figure 6-20. URL Filter Categories Actions

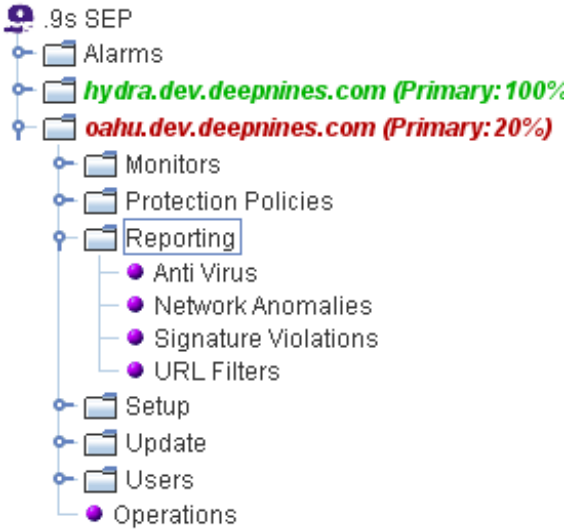
To edit an existing Rule Set

1. Select and highlight one of pre-set categories listed to edit.
2. Select action desired from pull-down menu **<ALLOW> <BLOCK> <REDIRECT>** to change.
3. Place check mark in Log Enabled box to allow logging of all activity
4. Click **<SAVE>**.

6.4 Reporting

The Reporting section of the EMC allows the administrator to obtain summary and detail information about what types of anti-viruses, network anomalies, signature violations and URL Filters have been detected from within the SEP. The reporting data can be search by date and can be viewed in many different ways.

To view a report, navigate to the Reporting folder of the EMC.



There are four different reporting categories:

Anti-Virus
Network Anomalies
Signature Violations
URL Filters

The *Anti-Virus* reporting will give the administrator summary and detailed information about the different types of viruses detected by the SEP, whether it was cleaned or un-cleaned (deleted), top email senders and receivers, as well as the detail about each.

The *Network Anomalies* reporting will give the administrator summary and detail information about what types of anomalies have been seen, the source or destination IP address of detections, the direction of where the detections came from, as well as, other detail information.

The *Signature Violations* reporting will give the administrator summary and detail information about what types of Deep Packet Inspection signatures have been detected. Signature Identification numbers, classifications, signature message detail, count and individual address information detail is also viewable.

The *URL Filters* reporting will give the administrator a summary and detailed trend analysis of URLs that are blocked, allowed or redirected.

6.4.1 Generating Reports

For each reporting type (Anti-Virus, Network Anomalies, Signature Violations, URL Filters), the administrator will be presented with the same type of initial configuration that will be necessary to pull report data.

To search report data, a date from which the report should start needs to be defined.
Select the From: date.

1. From the top of the report pane, select the drop down bar from the From: panel to expose a selectable calendar (Figure 6-21).
2. Select the day that is desired to search from by clicking on that day.
3. To select a time, the user can click on the hour, minute or second hand and while holding the left mouse button down, drag the hand to the desired time. Alternatively, the user can enter the information into the date field by clicking on the date and then typing the information into the window.

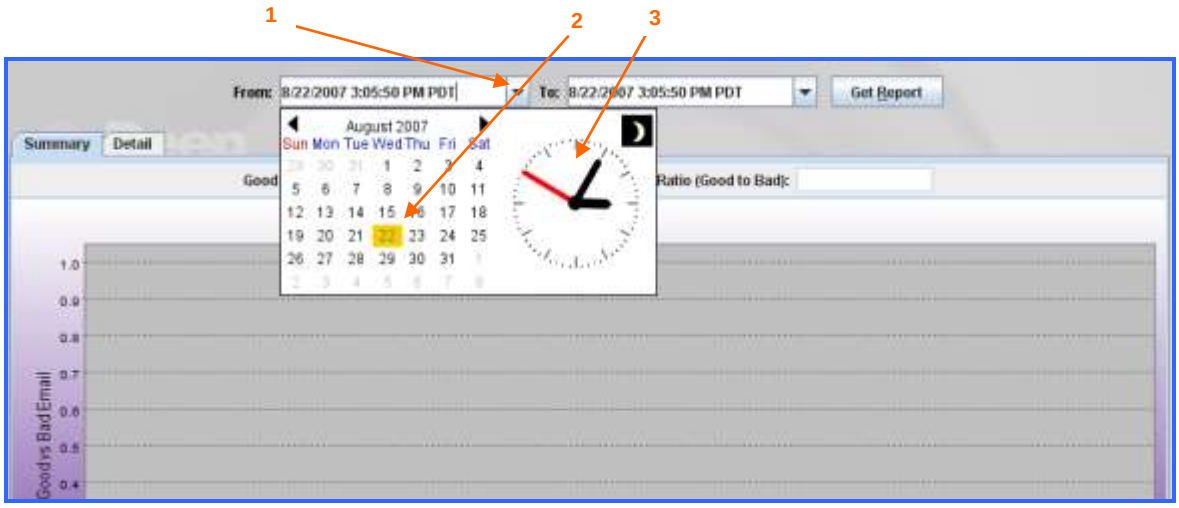


Figure 6-21. Reporting Pane Displaying From Date Calendar

To search report data, a date from which the report should end needs to be defined..
Select the To: date.

1. From the top of the report pane, select the drop down bar under the To: panel to expose a selectable calendar (Figure 6-22).
2. Select the day that is desired to search from by clicking on that day.
3. To select a time, the user can click on the hour, minute or second hand and while holding the left mouse button down, drag the hand to the desired time.
4. Alternatively, the user can enter the information into the date field by clicking on the date and then typing the information into the window.

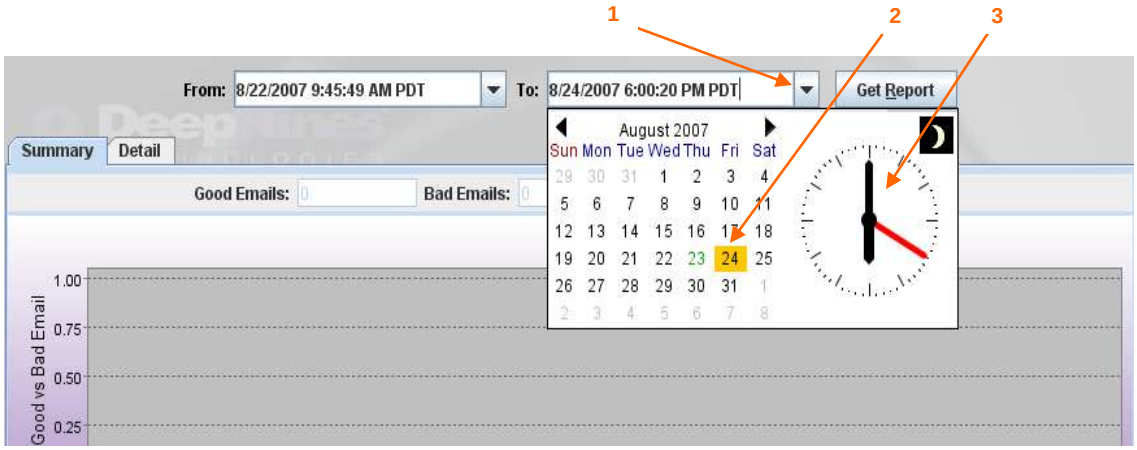


Figure 6-22. Reporting Pane Displaying To Date Calendar

To generate the report, ensure the desired dates are selected and then click the **<GET REPORT>** button. The data will start to fill in the report. It could take up to a minute for the report generation to be completed depending on the time selected and number of alerts.

NOTE

Reporting data is only viewable for the last 15 days of detections.

The below sections will describe each report and the different methods to obtain information from them.

6.4.2 Anti-Virus Report

The anti-virus report allows administrators to view what types of viruses have been detected and stopped by the SEP unit, as well as, detailed information about the email that was infected.

In Section 6.4.1 we talked about how to pull reports. In this section, we describe what types of reports are available and how to use them.

There are two tabs at the top left of the results pane.

- Summary - The types of summary reports are described in the below chart (Figure 6-23)
- Detail – Per detail of the violation detection

Table 6-10 lists each summary report type and their descriptions.

Summary Report Type	Description
Virus Name	Will list Virus names and number of occurrences of each.
Sender	Will show the top sender of emails. This shows emails sent not only viruses.
Receiver	Will show the top receiver of emails, this shows emails received not only viruses.
Cleaned Viruses	Will show the virus name and count. Cleaned viruses mean the SEP was able to correct the virus and keep the original email.
Uncleaned Viruses	Will show the virus name and count. Un-cleaned viruses mean the SEP was not able to clean the virus and therefore took the infected attachment out of the email and replaced it with a text file explain such.

Table 6-10. Summary Report Types

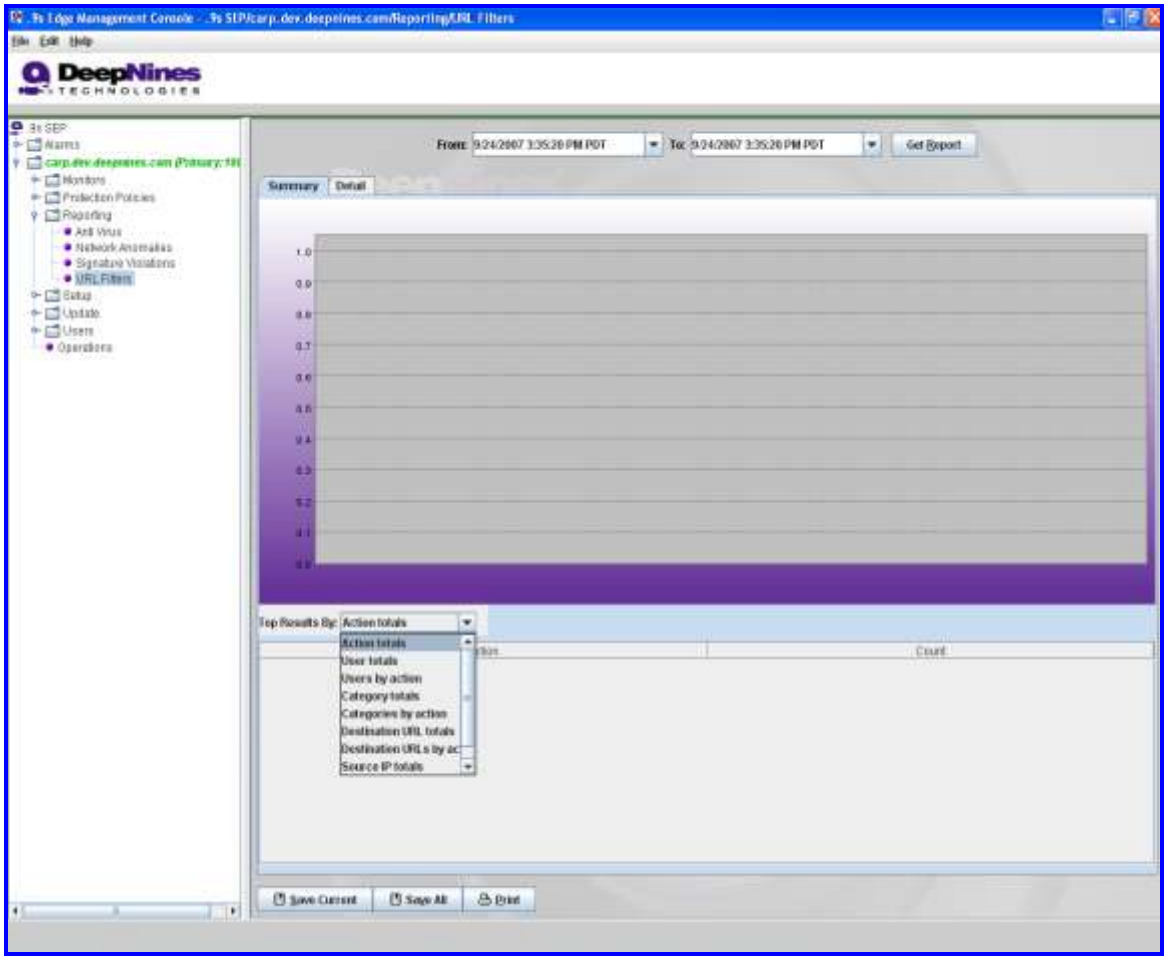


Figure 6-23. Summary Report - Types

To view one of the Summary reports described above:

- Select the dates that the report should encompass.
- Click **<GET REPORT>** button.
- From the drop down menu in the middle of the results view, pull down and select the desired report.
- If additional reports are desired, user can pull down the drop down bar to select a different report.

Once the date has been selected there is no need to click Get Report again, unless the date has changed. All of the reports can be viewed without having to select Get Report again.

To view Detail report information:

- Select the Detail tab from the top of the results pane.
- Select the dates that the report should encompass.
- Click **<GET REPORT>** button.
- Detail report information can be sorted, scrolled or drilled down by Sender Contains, Receiver Contains, Virus Name Contains and Cleaned Status.

6.4.3 Network Anomalies Report

In Section 6.4.1 we talked about how to pull reports. In this section, we describe what types of reports are available and how to use them.

The Network Anomaly Report allows administrators to view what types of network anomalies have been detected and stopped by the SEP unit, as well as, detailed information about the anomaly.

There are two tabs at the top left of the results pane.

- Summary - The types of summary reports are described in the below chart (Figure 6-24)
- Detail – Per detail of the violation detection (Figure 6-25)

Table 6-11 lists each summary report type and their descriptions.

Report Type	Description
Sender	Will display the top senders of network anomalies.
Receiver	Will display the top receivers of network anomalies.
Protocol	Will display the Protocols in which the anomaly occurred.
Bridge	Will display in which bridge the anomaly was detected.
Packet Origin	Will display the number of anomalies detected from outside hosts and inside hosts.
Bandwidth Consumed	Will display violation type, violation detector, Flow Specifier and the number of bytes that make up the anomalies detected.
Packet Dropped	Will display violation type, violation detector, Flow Specifier and the number of packets dropped that make up the anomalies detected.
Violation Type	Will display if the violation type was from a protocol or network anomaly.
Flow Specifier	Will display the Flow Specifier in which the anomaly was from. A report of No Flow Specifier means that the packet was dropped before it was put into Flow Specifiers from either stateless or malformed.

Table 6-11. Report Types

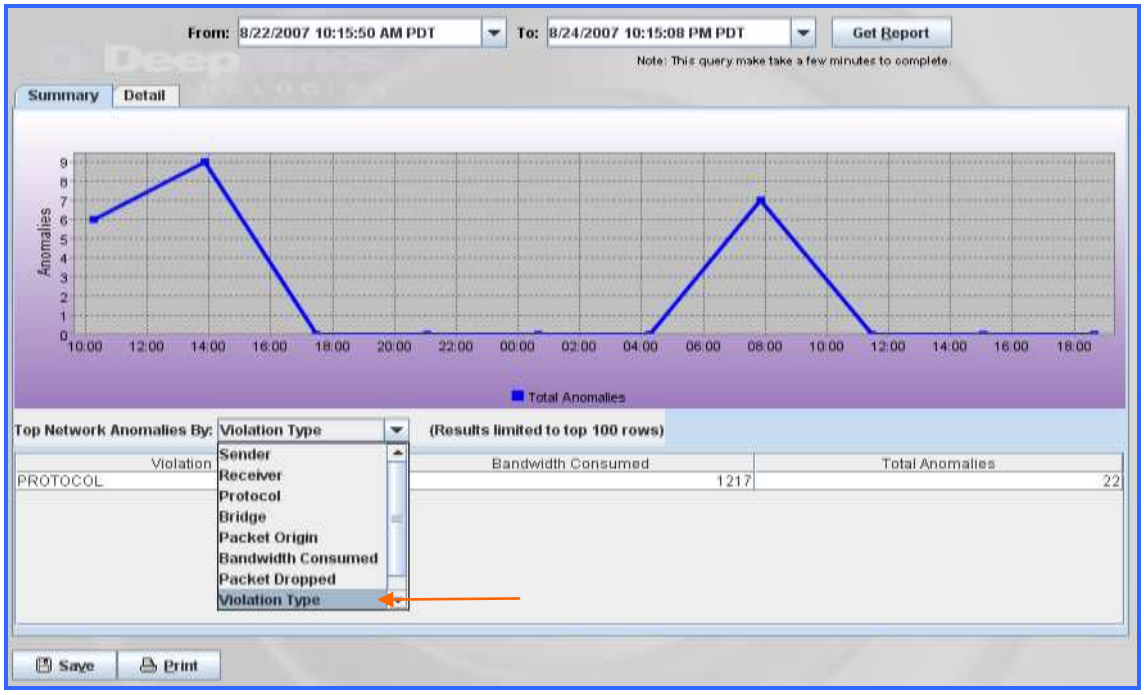


Figure 6-24. Network Anomalies Report Types – Summary Tab

To view one of the Summary reports described above:

- Select the dates that the report should encompass (Figure 6-24)
- Select **<GET REPORT>** button.
- From the drop down menu in the middle of the results view, pull down and select the desired report.
- If additional reports are desired, user can pull down the drop down bar to select a different report.

NOTE

Once the date has been selected there is no need to click Get Report again, unless the date has changed. All of the reports can be viewed without having to select Get Report again.

To view Detail report information:

- Select the Detail tab from the top of the results pane.
- Select the dates that the report should encompass (Figure 6-25).
- Select **<GET REPORT>** button.
- Detail report information can be sorted, scrolled or drilled down by Source or Destination IP address, Source or Destination Port, Protocol, Direction, Violation Type, Bride ID or Flow Spec.
- A combination of drill down capabilities can also be used together.
- There is also a Newer and Older feature that will allow the user to see the next set of detailed information, if there are more than 500 records returned from the report.

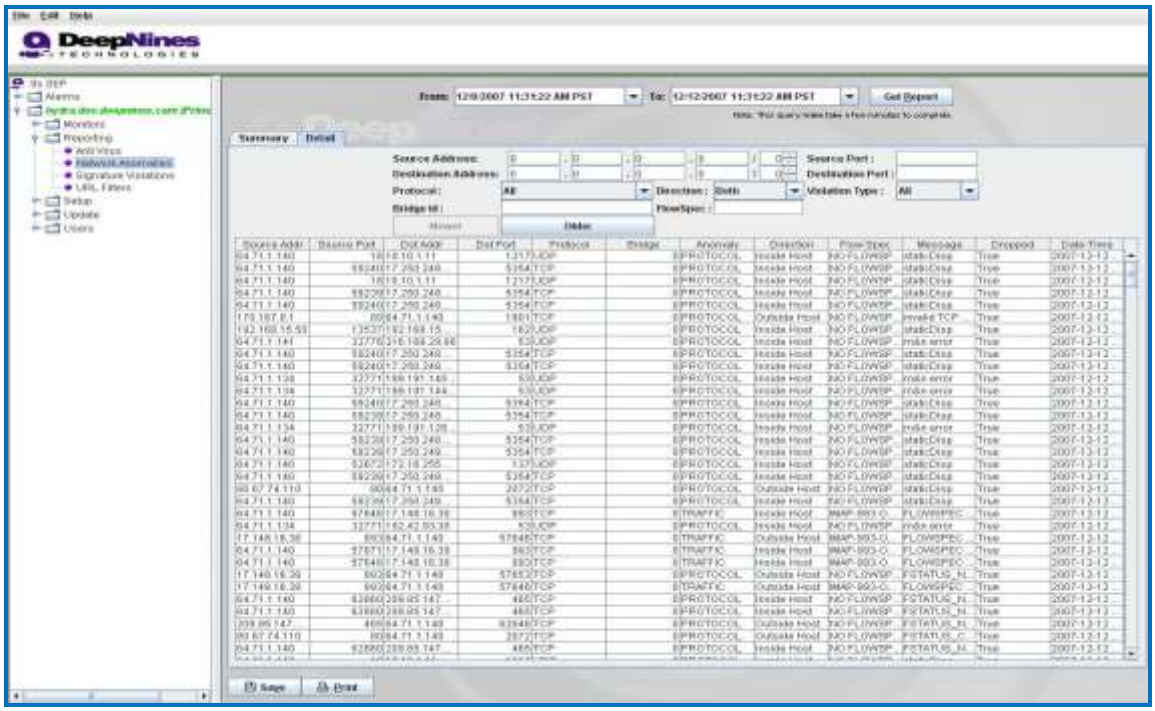


Figure 6-25. Network Anomalies Report Types – Details Tab

6.4.3.1 Type of Anomalies

There are two basic types of anomalies:

- Protocol Anomalies: These are dropped for any reason other than rate control
- Traffic Anomalies: These are dropped due to some form of rate control

The protocol anomalies have a number of sub-categories, although the category is not explicitly logged. The strings in quotes are what are expected in the anomalies report (See table 6-12).

Bad Packet:	
“noProtoHdr”	Usually the packet is too short.
“Malformed”	Other problem that renders the header invalid.
Stateless:	
“LAND attack“	A packet type that crashed old PCs.
“Multicast violation”	IP multicast blocked (configurable)
“Broadcast violation”	IP broadcast blocked (configurable)
“IP header options violation”	IPv4 header options blocked (configurable).
“ECN violation”	Explicit Congestion Notification blocked (RFC 3136) (configurable).
“Unsupported IPv6 header violation”	Problem with IPv6 protocol header.
“Unsupported IPv6 header option violation”	IPv6 header options blocked (configurable).
“ICMP violation”	Blocked ICMP type (configurable).
Stateful:	
“Invalid TCP sequence number”	TCP sequence number does not match current window for flow.
“FSTATUS_NEW flag error”	A TCP packet other than a SYN was received for an unknown flow. Usually the result of handling a packet for a flow that has been timed out or closed for some other reason.
“FSTATUS_PENDING FIN retry error”	Retransmitted FIN has invalid sequence number.
“FSTATUS_PENDING flag error”	Invalid TCP packet during connection setup
“FSTATUS_CURRENT FIN retry error”	Retransmitted FIN has invalid sequence number.
“FSTATUS_CURRENT flag error”	Invalid TCP packet for established flow.
“FSTATUS_GRACE flag error”	Invalid TCP packet for flow being picked up in grace period. When the SEP starts up after a failover, it attempts to learn the state of any in-progress flows for a period of time known as grace period, without blocking them outright.
“FSTATUS_GRACE grace period expired”	Need packets in both directions before grace period expires. "M&N error", Conversation symmetry problem. For most protocols, must see traffic in both directions (configurable)
“FSTATUS_PENDING FLAG ERROR”	This is an indication of asymmetrical routing, where the SEP is only seeing traffic in one direction.

Fragments: (various problems with fragmented packets)	
“frag-nomatch”	Does not match previous fragment
"frag-toomany"	More than configured maximum number of fragments (default is 3).
"frag-badoffset"	Offset does not match previous fragment, or is otherwise bad.
"frag-toobig"	Reassembled packet would be bigger than 64K bytes.
"frag-badfirst"	First fragment must be at least 256 bytes*, or some other problem.
"frag-badlength"	Length of data must be multiple of 4 bytes except for last fragment.
"frag-inactive"	A previous fragment was dropped, later fragments no longer accepted.

Table 6-12. Types of Anomalies

6.4.4 Signature Violations Report

In Section 6.4.1 we talked about how to pull reports. In this section, we describe what types of reports are available and how to use them.

The Signature Violations Report allows administrators to view what types of signatures have been detected by the SEP unit, as well as, detailed information about the DPI detections.

There are two tabs at the top left of the results pane.

- Summary - The types of summary reports are described in the below chart (Figure 6-26)
- Detail – Per detail of the violation detection (Figure 6-27)

Table 6-13 lists each summary report type and their descriptions.

Report Type	Description
Signature ID	Will display the Signature ID number, the classification it belongs to, the message of the actual signature and the number of times that signature ID was detected.
Classification	Will display only the classification from which the violation occurred and the number of times it has been detected.
Sender	Will display the IP address of the senders that a violation has occurred. These can display both outside and inside IP addresses, as well as, the count associated with the IP address.
Receiver	Will display the IP address of the destined receiver that a violation has occurred. This report can display both outside and inside IP addresses, as well as, the count associated with the IP address.
Bandwidth Consumed	Will display the Signature ID number, Classification it belongs to, the full message of the violations and the byte count associated with each rule. Depending on the action set on each of the classifications this can be representative of the amount of bandwidth that could be saved by blocking this type of violation.

Table 6-13. Report Types

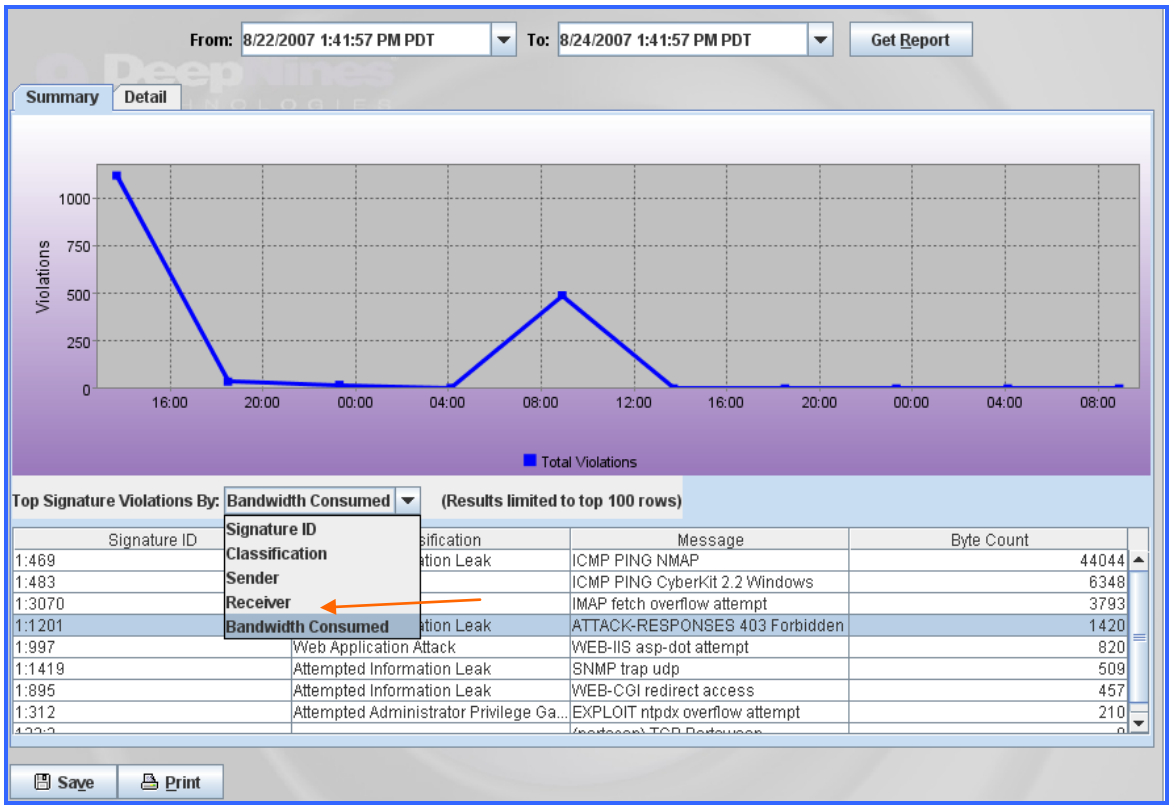


Figure 6-26. Summary View of Signature Violations Report Types

To view one of the Summary reports described above:

- Select the dates that the report should encompass.
- Select **<GET REPORT>** button.
- From the drop down menu in the middle of the results view, pull down and select the desired report.
- If additional reports are desired, user can pull down the drop down bar to select a different report.

NOTE

Once the date has been selected there is no need to click Get Report again, unless the date has changed. All of the reports can be viewed without having to select Get Report again.

To view Detail report information:

- Select the Detail tab from the top of the results pane (Figure 6-27).
- Select the dates that the report should encompass.
- Select **<GET REPORT>** Report button.

- Detail report information can be sorted, scrolled or drilled down by Source or Destination IP address, Source or Destination Port, Classification Contains, SID Contains and Protocol.
- A combination of drill down capabilities can also be used together.
- There is also a Newer and Older feature that will allow the user to see the next set of detailed information, if there are more than 500 records returned from the report

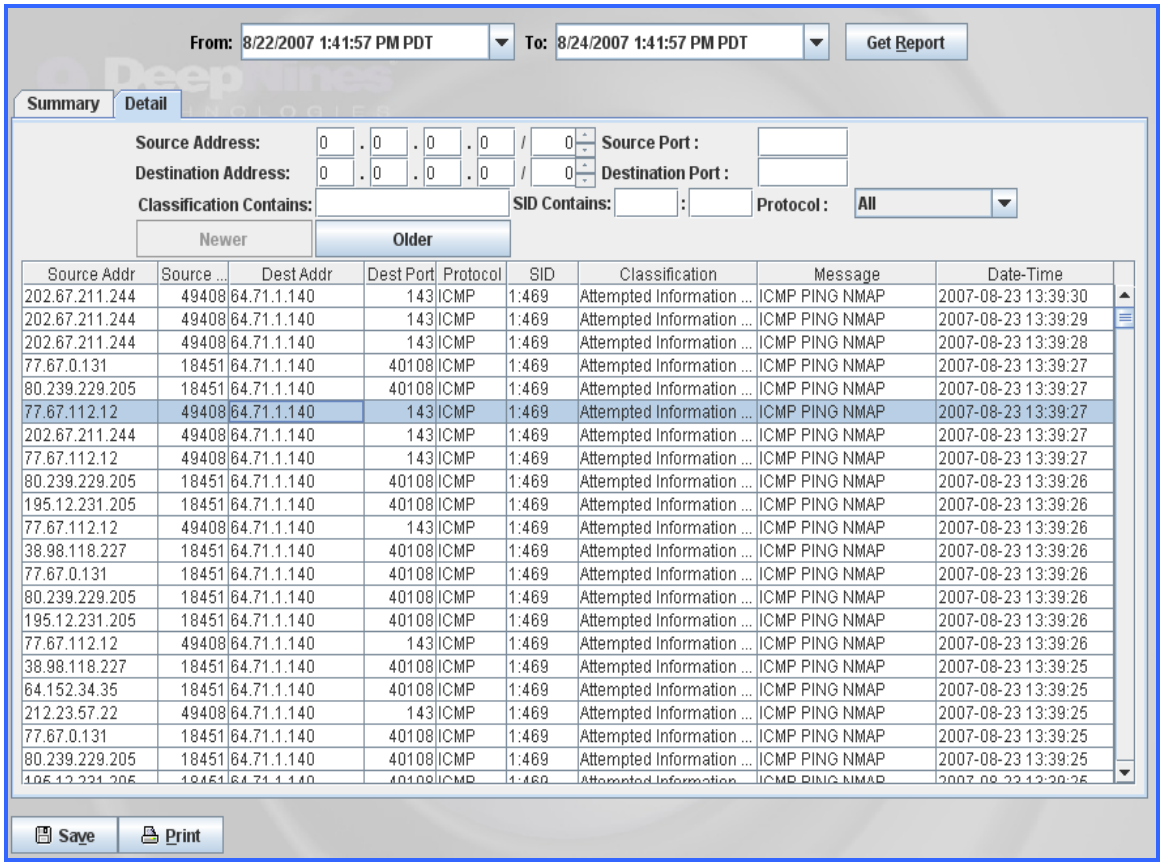


Figure 6-27. Detail View of Signature Violations Information

6.4.5 URL Filters

The URL Filters Report allows administrators to view a summary and detailed trend analysis of URLs that are blocked, allowed or redirected.

In Section 6.4.1 we talked about how to pull reports. In this section, we describe what types of reports are available and how to use them.

There are two tabs at the top left of the results pane.

- Summary - The types of summary reports are described in the below chart (Figure 6-28).
- Detail – Per detail of the violation detection (Figure 6-29).

Table 6-14 lists each report type and their descriptions.

Report Type	Description
User totals	Lists total number of filtering actions taken per user.
Users by action	Lists users by actions.
Category total	Lists total number of filtering actions per category.
Categories by action	Lists categories by action.
Destination URL totals	Lists total number of filtering actions per destination URL.
Destination URLs by action	Lists filtering actions per destination URL by action.
Source IP totals	Lists total number of filtering actions per source IP.

Table 6-14. Report Types

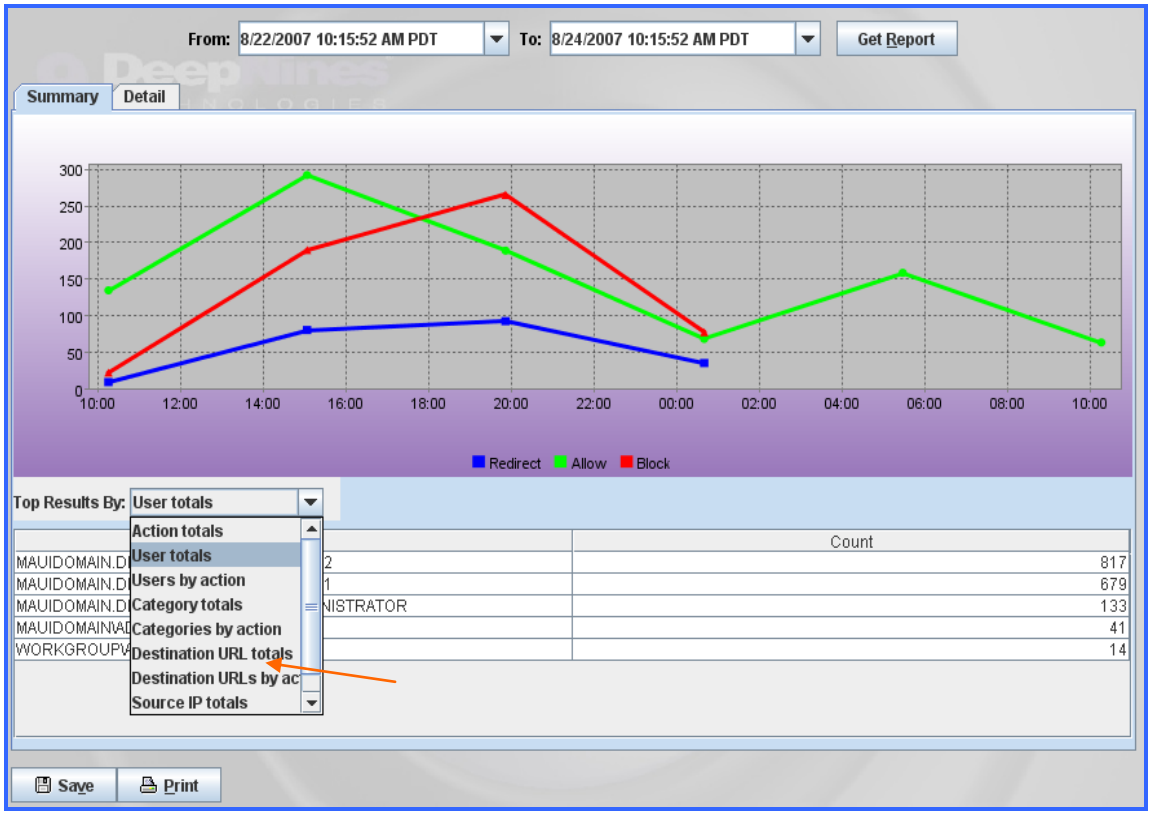


Figure 6-28. Summary View of URL Filters Report Types

To view one of the Summary reports described above:

- Select the dates that the report should encompass (Figure 6-28).
- Select **<GET REPORT>** button.
- From the drop down menu in the middle of the results view, pull down and select the desired report.
- If additional reports are desired, user can pull down the drop down bar to select a different report.

NOTE

Once the date has been selected there is no need to click Get Report again, unless the date has changed. All of the reports can be viewed without having to select Get Report again.

To view Detail report information:

- Select the Detail tab from the top of the results pane (Figure 6-29).
- Select the dates that the report should encompass.
- Select **<GET REPORT>** Report button.
- Detail report information can be sorted, scrolled or drilled down by Source or Destination IP address, Source or Destination Port, Classification Contains, SID Contains and Protocol.
- A combination of drill down capabilities can also be used together.
- There is also a Newer and Older feature that will allow the user to see the next set of detailed information, if there are more than 500 records returned from the report.

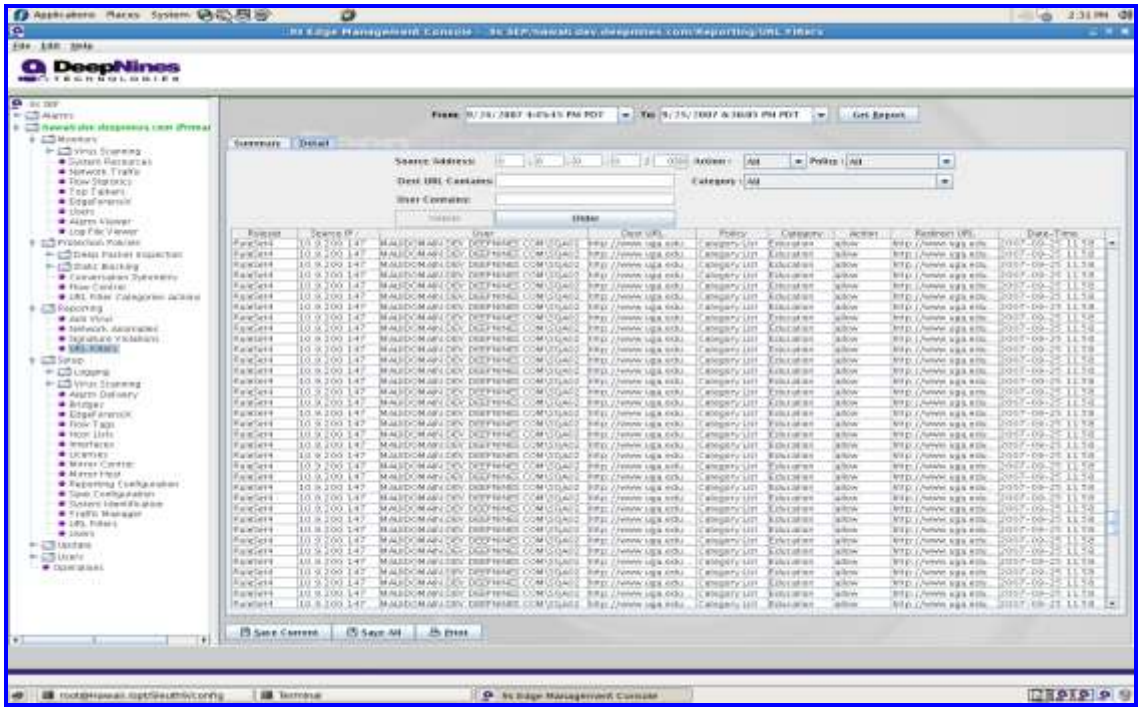


Figure 6-29. Summary View of URL Filters Report Types

6.4.6 Saving and Printing Reports

Both Summary and Detail reports can be saved to the administrator's computer. This will allow the administrator to email, archive or print out the report information.

To save reports:

- Select the **<SAVE>** button from the desired report.
- Select the location or folder on the user's computer where the report is to be saved.
- Name the file to signify the date that the report was generated.
  Example: *Detail_report_08-05-2007.htm*
- By default the file extension is .html, make sure to name the file .htm extension.
- Click **<SAVE>** to save the report.

To print reports:

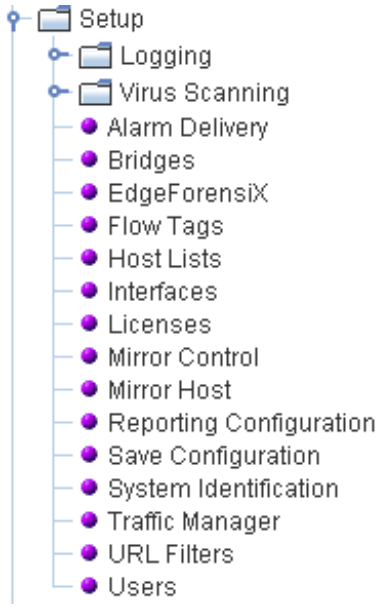
- Select the **<PRINT>** button from the desired report.
- When the printer select window appears, select the desired printer.
- Select any other desired printing options.
- Select **<OK>** to print.

The print options could vary depending on operating system or printer type.

Ensure in the printer pop-up menu that the amount of data to print is not too large. Printing the detail report could be in the hundreds of pages if not drilled down.

6.5 Setup

The Setup section of the Command Explorer provides setup configuration options for the following operations:



6.5.1 Logging

SEP provides a number of configurable logging options, within two categories. General logging options include logging system alarms and logging audit entries. Users assigned the *"May configure general logging privilege"* are allowed to set these options.

Advanced logging options include various SEP Executive, Traffic Manager, Virus Scanning, and miscellaneous log entries.

NOTE

Required Permission: To configure a remote logging server, you must have the "May Configure Advanced Logging" permission.

When logs are kept locally, the maximum size for each log file is 20MB. When a log file reaches the 20MB limit, SEP automatically creates a new log file. SEP can maintain 5 log files, storing 100MB of data at any one time. Once the limit of five 20MB files is reached, SEP deletes the oldest log file before creating a new one, maintaining the 5-file limit while continuing data logging.

6.5.1.1 Setting General Logging Options

General logging options include alarm delivery and audit entries only.

NOTE

Required Permissions: Users who are assigned the "May Configure General Logging" privilege are able to set alarm delivery and audit logging options.

To set alarm logging options:

1. Verify that the unit to set general logging options is the active host.
2. Select Alarm Delivery from the Setup folder (Figure 6-30).

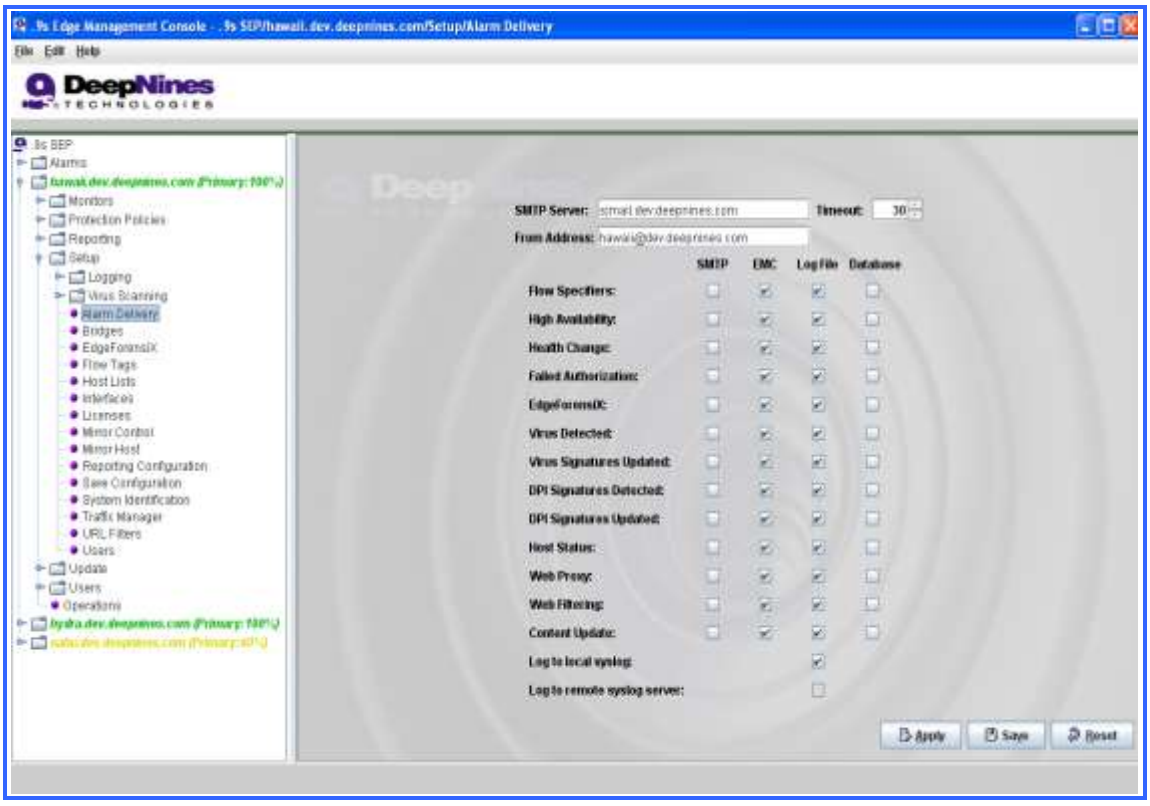


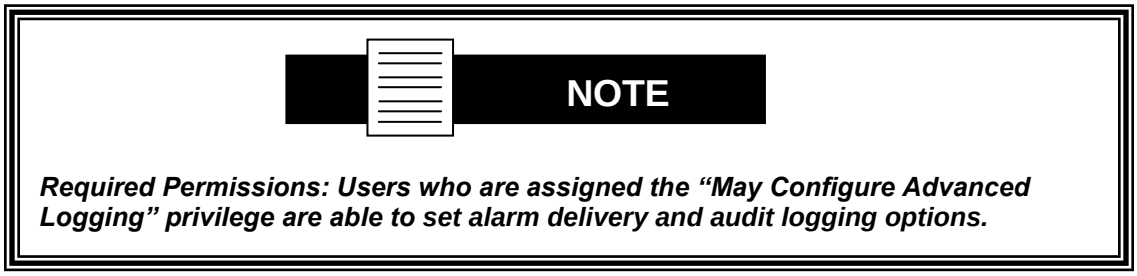
Figure 6-30. General Logging Options Screen

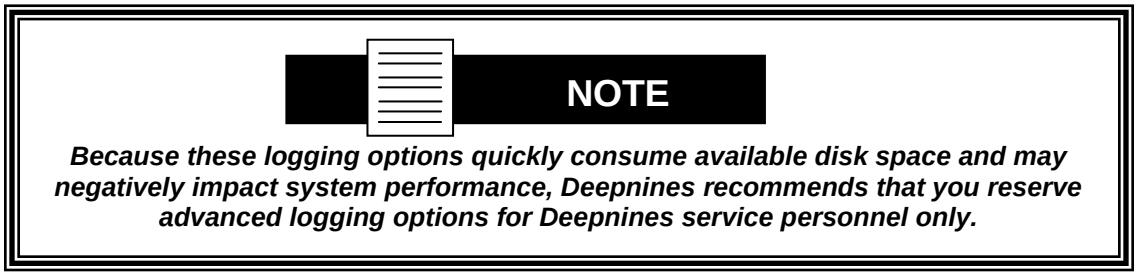
3. Enter the IP address of the SMTP Server to be used for email alarm delivery.
4. Enter a Timeout value in seconds for SEP connection to the mail server.
5. In the From Address field, enter the email address that SEP will use to mail alarm data.
6. Activate the checkboxes in the Log File column for each alarm type to be written to the log.
7. Activate the Log to local syslog checkbox to writ e the alarm entries to the local system log and/or activate the Log to remote syslog server checkbox (if a remote system log has been configured) to write the alarm entries to the remote system log.

8. Click **<SAVE>** to immediately apply your changes to a running system and to maintain the settings until you change them again, or click one of the following:
9. Click **<APPLY>** to immediately apply your changes to a running system but discard those changes the next time the SEP host is restarted.
10. Click **<RESET>** to discard your changes without applying or saving them.

6.5.1.2 Setting Advanced Logging Options

Advanced logging options include several options for the SEP Executive, the Traffic Manager, and virus scanning as well as some miscellaneous options.


NOTE
Required Permissions: Users who are assigned the "May Configure Advanced Logging" privilege are able to set alarm delivery and audit logging options.


NOTE
Because these logging options quickly consume available disk space and may negatively impact system performance, Deepnines recommends that you reserve advanced logging options for Deepnines service personnel only.

To set advanced logging options:

1. Verify that the unit to set advanced logging options is the active host.
2. Select the Logging folder from the Setup folder (Figure 6-31). The Logging folder contains three other folders and the miscellaneous command option.
3. Open the folder associated with the SEP component for which to set logging options and if necessary, select a command option. Logging options for that category appear in the Action pane.
4. Activate the checkbox associated with the message to be logged or clear the checkbox to omit the message from the log, or perform one of the following:
5. Click **<SET ALL>** to activate all the checkboxes.
6. Click **<CLEAR ALL>** to clear all the checkboxes.
7. Select a message severity level from the list. The default is Warning. When you select a severity level, all messages of that severity or above are logged.
8. Click **<SAVE>** to immediately apply your changes to a running system and to maintain the settings until you change them again, or click one of the following:
9. Click **<APPLY>** to immediately apply your changes to a running system but discard those changes the next time the Sleuth9 host is restarted.
10. Click **<RESET>** to discard your changes without applying or saving them.

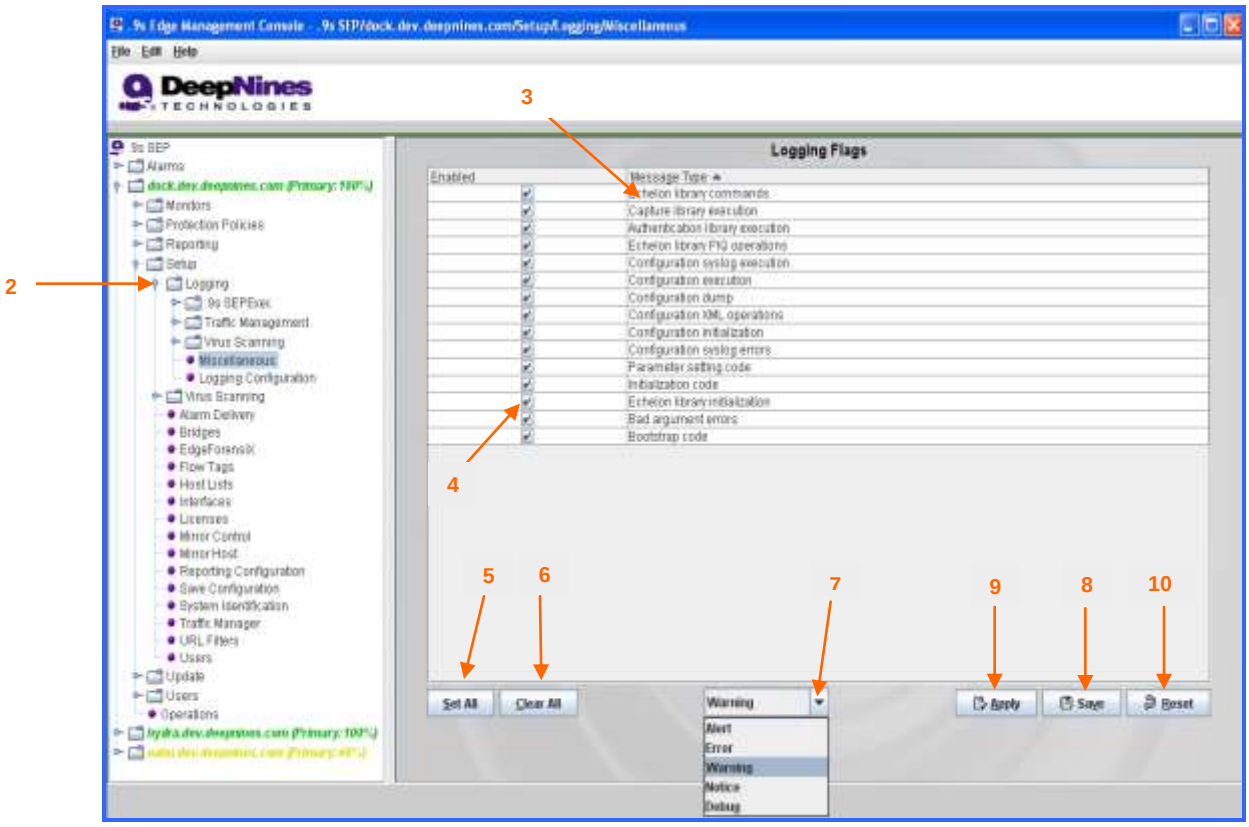


Figure 6-31. Advanced Logging Options Screen

6.5.1.3 Viewing Log Files

SEP provides the ability to view SEP logs from within the EMC. Log display is limited to 1 MB.

To view the current SEP log file:

1. Verify that the unit to view log entries is the active host.
2. Select Log File Viewer from the Monitors folder (Figure 6-32). Log viewing options appear in the Action pane.
3. Select a date/time range for the log entries to be displayed and click **OK**.
4. SEP displays log entries for the time interval you specified. If the specified time interval has more entries than fit in the 1 MB limit, the output begins with the most recent entry within the time interval and truncates later entries. If output is truncated, select a smaller time interval.
5. (Optional) Activate the Word Wrap checkbox to display the log entries within the bounds of the current window; clear the checkbox to display log entries on a single line.
6. (Optional) Click **<COPY TO CLIPBOARD>** to copy all displayed log entries. Copied entries are in plain text format and may be pasted into any application.

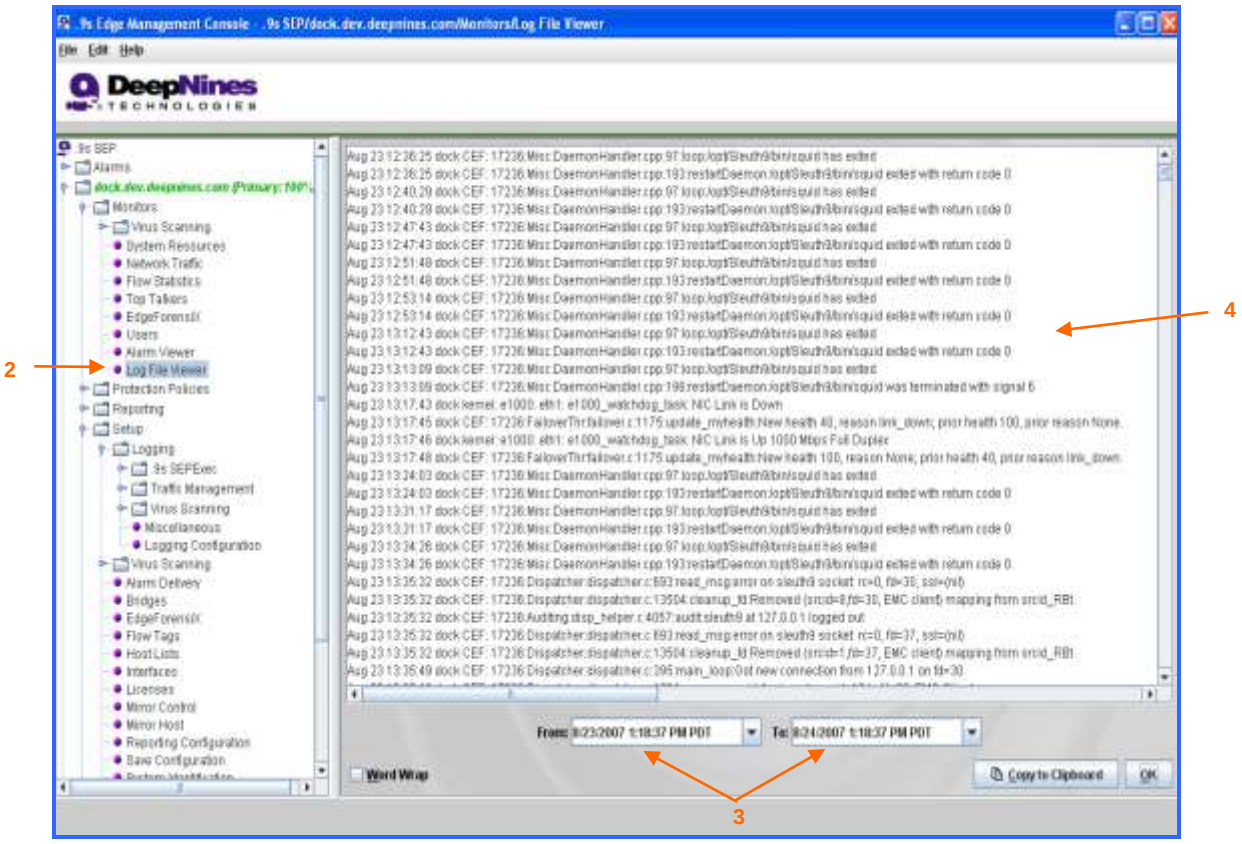


Figure 6-32. Log File Viewer Screen

6.5.1.4 Setting Remote Log Host

You may optionally configure SEP to save logs on a remote log server. When you do, the log server assumes management of the log file, so SEP's 5-file 20MB limit does not apply.

NOTE

By default, most syslog daemons do not accept log messages from remote systems. You must configure the daemon on the remote system to accept logging messages from SEP. On Solaris systems, start syslogd using the –t option. On Linux systems, start syslogd using the –r option.

To configure a remote logging server:

1. Verify that the unit on which to configure remote logging is the active host.
2. Select the Logging folder from the Setup folder, and then click Logging Configuration (Figure 6-33).
3. Enter the IP address of the server on which to write the SEP logs. The remote log server must be on the SEP private subnet.
4. Select **"log to remote syslog server"** by checking this box.

5. Click **<SAVE>** to immediately apply your changes to a running system and to maintain the settings until you change them again, or click one of the following:
   a. Click **<APPLY>** to immediately apply your changes to a running system but discard those changes the next time the SEP host is rebooted.
   b. Click **<RESET>** to discard your changes without applying or saving them.

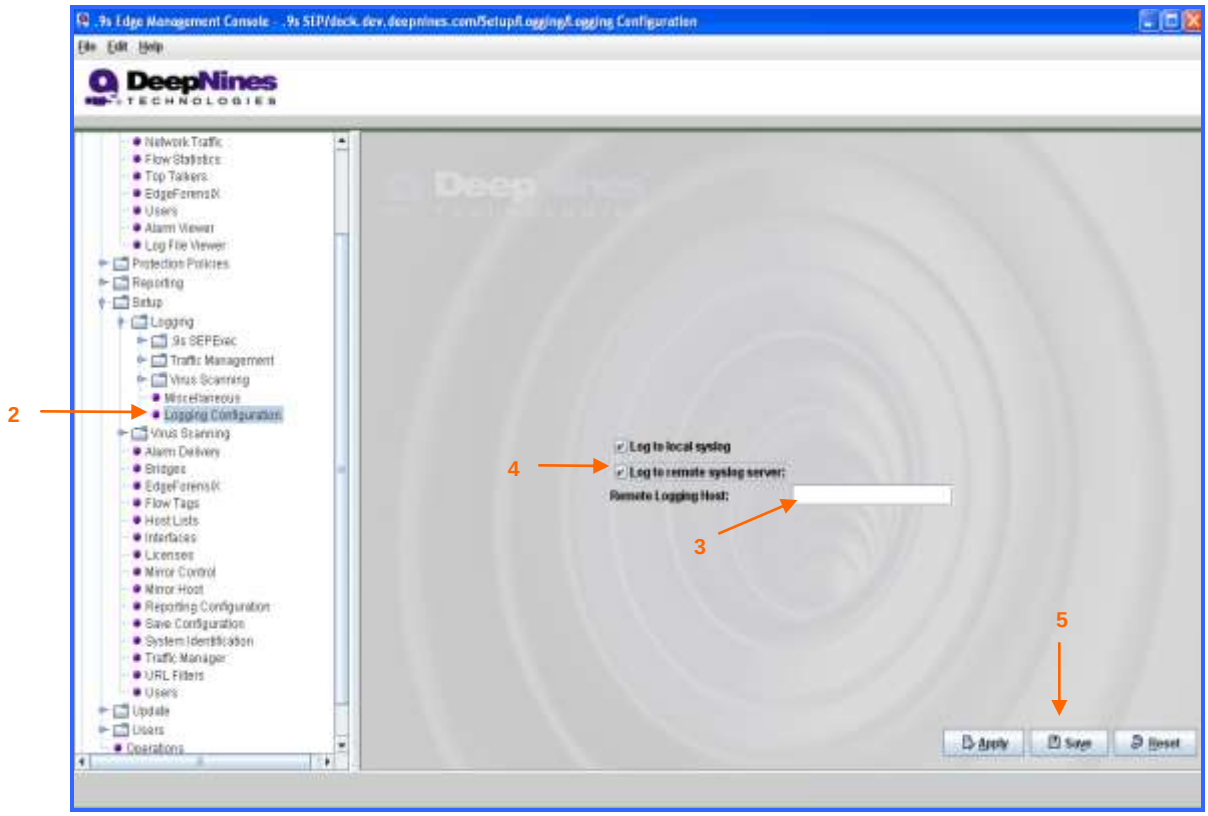


Figure 6-33. Logging Configuration Screen

NOTE

By default, most syslog daemons do not accept log messages from remote systems. You must configure the daemon on the remote system to accept logging messages from SEP. On Solaris systems, start syslogd using the –t option. On Linux systems, start syslogd using the –r option.

6.5.2 Virus Scanning

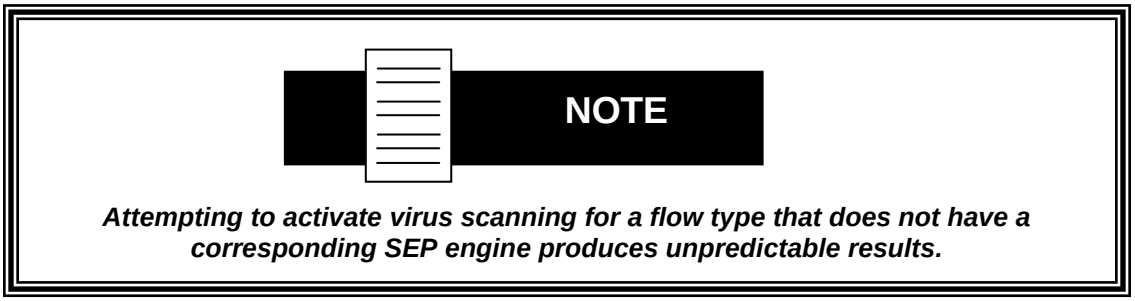
SEP provides integrated virus scanning for SMTP and POP3 email traffic. By default, SMTP traffic is defined as TCP over port 25 and POP3 traffic is defined as TCP over port 110. To adapt itself to the unique demands of your network, however, SEP provides the capability to assign virus scanning to any flow specifier, no matter what match rules are defined, although it is not recommended. This flexibility introduces the possibility for error. Take care not to specify virus scanning for any protocol other than SMTP and POP3 or unpredictable results, including completely blocking all traffic that matches the flow specifier, can occur.

When you create a flow specifier for TCP packet traffic that specifies virus scanning, the SEP system assembles the individual packets into a complete message and routes the message to the appropriate proxy. The proxy delivers the message to the virus scanning module for processing. Messages that are virus-free or cleaned and repaired are returned to the proxy, which then forwards the message to its destination. Messages that cannot be repaired are blocked and the system forwards a notification message to the intended recipient.

6.5.2.1 Activating Virus Scanning

To activate virus scanning:

1. Verify that the unit on which to activate virus scanning is the active host.
2. Create or edit a flow specifier that governs TCP packet traffic over the port on which the type of traffic to be scanned is transmitted (typically, port 25 for SMTP traffic and port 110 for POP3 traffic).


NOTE
Attempting to activate virus scanning for a flow type that does not have a corresponding SEP engine produces unpredictable results.

3. Apply or save your changes.

6.5.2.2 Customizing Virus Scanning Messages

SEP notifies a message's intended recipient when a virus was detected and cleaned from an attachment, when a virus was detected and the attachment could not be repaired, and when an attachment is too long to be scanned for viruses. You can customize the messages that SEP transmits in these situations.

To customize virus scanning messages:

1. Verify that the unit on which to customize virus scanning messages is the active host.
2. Open the Virus Scanning folder from the Setup folder (Figure 6-34). Current system messages appear in the Virus Alert Message folder.
3. Customize the messages as desired. Messages may be of any length and may contain any combination of alphanumeric characters, symbol and punctuation characters, and spaces.
4. Click **<SAVE>** to immediately apply your changes to a running system and to maintain the settings until you change them again, or click one of the following:

a. Click **<APPLY>** to immediately apply your changes to a running system but discard those changes the next time the Sleuth9 host is restarted.
b. Click **<RESET>** to discard your changes without applying or saving them.

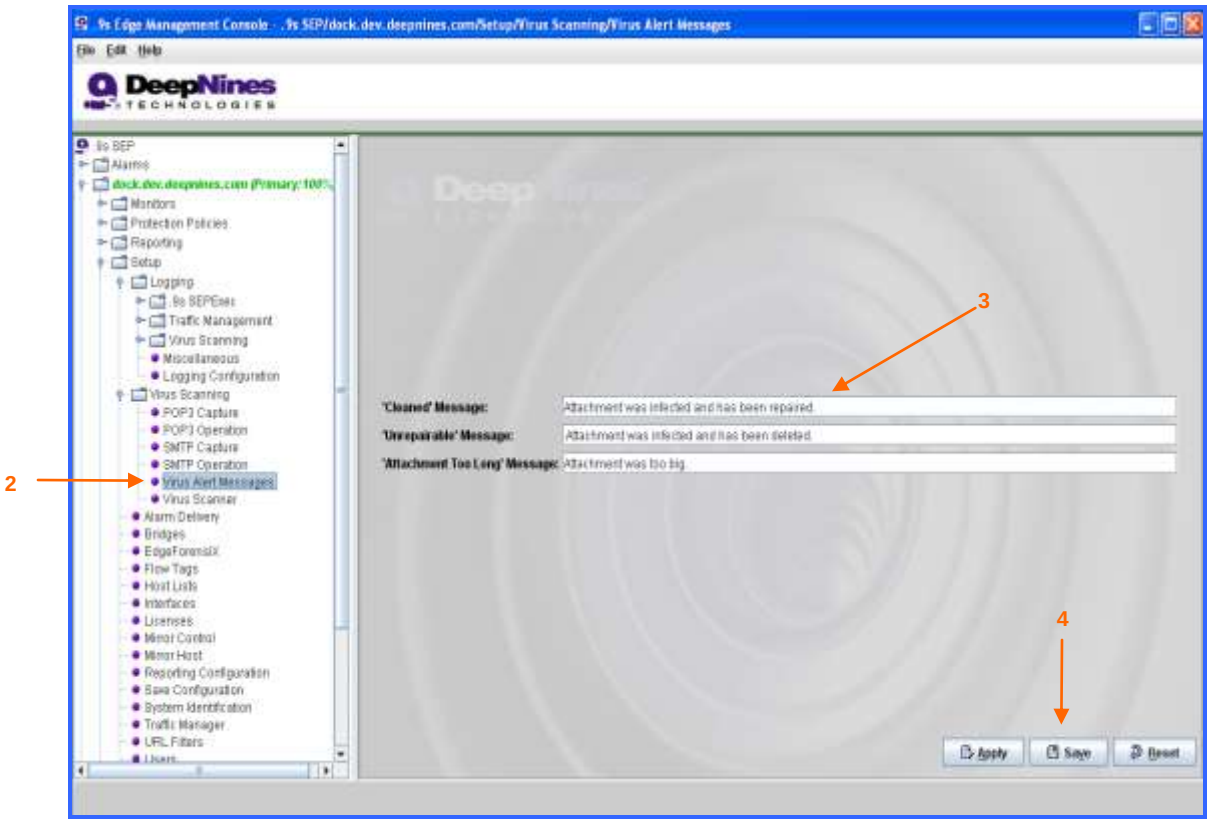


Figure 6-34. The Virus Alert Messages Display

6.5.2.3 Configuring Virus Scanning Options

SEP allows you to configure each of the available virus scanning engines to provide a maximum attachment size and to specify Edge ForensiX capture of virus data.

6.5.2.4 Capturing Virus and Emails

To Capture Virus and Emails to the Edge ForensiX System.

1. Activate the Capture When Repaired check box to capture data about viruses that were successfully removed from attachments;
2. Activate the Capture When Unrecoverable check box to capture data about viruses that could not be removed from attachments.
3. To capture data about all viruses found in attachments, activate both check boxes.
4. Click **<SAVE>** to immediately apply your changes to a running system and to maintain the settings until you change them again, or click one of the following:
    a. Click **<APPLY>** to immediately apply your changes to a running system but discard those changes the next time the SEP host is rebooted.
    b. Click **<RESET>** to discard your changes without applying or saving them.

6.5.2.5 Setting Maximum Attachment Size

To configure a virus scanning proxy for options:

1. Verify that the unit on which to configure virus scanning is the active host.
2. Select the Virus Scanning folder from the Setup folder (Figure 6-35), then click either SMTP Capture for SMTP or POP3 Capture for POP3. Current engine configuration values are displayed.

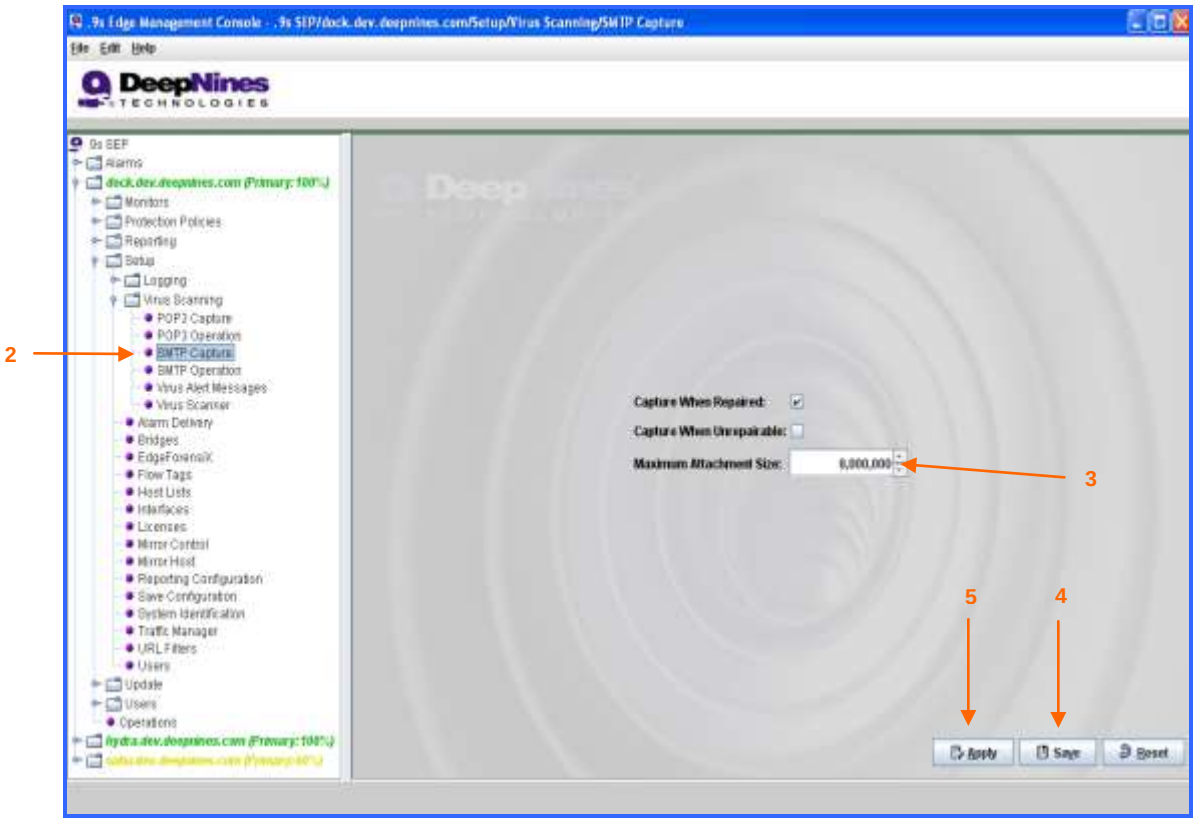


Figure 6-35. SMTP Capture Screen

3. Specify a Maximum Attachment Size in number of bytes. The default is 8,000,000 bytes.

NOTE

The maximum attachment size must be configured to include MIME encoding, which increases the original attachment size by approximately one-third. The default of 8,000,000 bytes, therefore, allows an original attachment size of approximately 6,000,000 bytes.

4. Click **<SAVE>**.
5. Click **<APPLY>**.

6.5.2.6 Stopping/Starting Virus Scanning

Activating virus scanning is a two-part process. First, start the appropriate engine (POP3 or SMTP) for the email to be scanned if it is not already running, then start the virus scanner component. The engine intercepts email traffic and routes it to the Virus Scanner component. The Virus Scanner component returns the email traffic to the engine after processing, and the engine transmits the message appropriately.

Starting Virus Scanning

To start virus scanning:

1. Verify that the unit to start virus scanning is the active host.
2. Select the appropriate engine folder (POP3 or SMTP) from the Operations panel.
3. Click **<START>**.
4. Click **<YES>** to confirm your action.

Stopping virus scanning

To stop virus scanning:

1. Verify that the unit to stop virus scanning is the active host.
2. Select the appropriate engine folder (POP3 or SMTP) from the Operation folder.
3. Click **<STOP>**.
4. Click **<YES>** to confirm your action.

6.5.2.7 Updating Virus Signatures – Automatic

Virus signature (.dat) files define viruses for the virus scanning module. New virus signature files are released almost daily and may also be released as new virus threats are discovered. The SEP automatically downloads and installs virus signature files on a schedule of your choosing from Deepnines website. Each SEP will download the signature files.

6.5.3 Alarm Delivery

Configuring SEP alarms allows you to specify which alarms are delivered by the SEP system and where alarm data is stored (Figure 6-36).

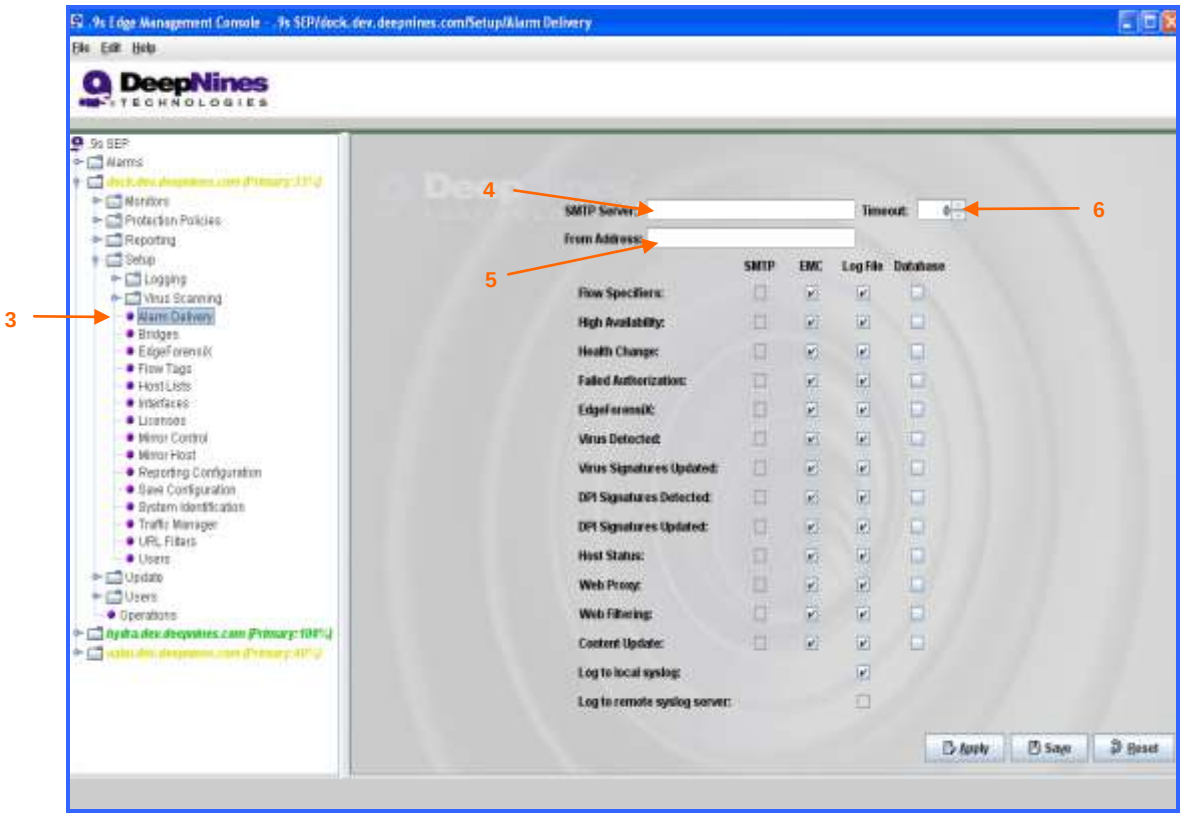


Figure 6-36. Alarm Delivery Screen

6.5.3.1 Alarm Delivery via SMTP

To configure SEP alarms for SMTP delivery:

1. Verify that the unit to configure alarms is the active host.
2. Verify that a default gateway host has been entered for the system in the System Identification folder within the Setup.
3. Select Alarm Delivery from the Setup folder.
4. In the SMTP Server field, enter the name of the mail server that SEP will use to send alarms.
5. In the From Address field, enter an email address that will signify that the alert came from the SEP i.e., SEP@domain.com.
6. Enter a Timeout value in seconds for the SEP mail server connection.
7. For each of the seven available alarm types, select the desired alarm delivery and storage methods under the SMTP column.
8. Click <SAVE> to immediately apply your changes to a running system and to maintain the settings until you change them again, or click one of the following:
    a. Click **<APPLY>** to immediately apply your changes to a running system but discard those changes the next time the SEP host is restarted.
    b. Click **<RESET>** to discard your changes without applying or saving them.

6.5.3.2 Alarm Delivery via EMC

To configure SEP alarms for delivery to the Management Console:

1. Verify that the unit to configure alarms is the active host.
2. Select Alarm Delivery from the Setup folder.
3. For each of the seven available alarm types, select the desired alarm delivery and storage methods under the EMC column.
4. Click Save to immediately apply your changes to a running system and to maintain the settings until you change them again, or click one of the following:
    a. Click **<Apply>** to immediately apply your changes to a running system but discard those changes the next time the SEP host is restarted.
    b. Click **<Reset>** to discard your changes without applying or saving them.

6.5.3.3 Alarm Delivery via Log File

To configure SEP alarms for delivery to the Log File:

1. Verify that the unit to configure alarms is the active host.
2. Select Alarm Delivery from the Setup folder.
3. For each of the seven available alarm types, select the desired alarm delivery and storage methods under the Log File column.
4. Click Save to immediately apply your changes to a running system and to maintain the settings until you change them again, or click one of the following:
    a. Click **<Apply>** to immediately apply your changes to a running system but discard those changes the next time the SEP host is restarted.
    b. Click **<Reset>** to discard your changes without applying or saving them.

6.5.3.4 Alarm Delivery via Database

To configure SEP alarms for delivery to the Edge ForensiX Database:

1. Verify that the unit to configure alarms is the active host.
2. Select Alarm Delivery from the Setup folder.
3. For each of the seven available alarm types, select the desired alarm delivery and storage methods under the Log Database column.
4. Click Save to immediately apply your changes to a running system and to maintain the settings until you change them again, or click one of the following:
    a. Click **<Apply>** to immediately apply your changes to a running system but discard those changes the next time the SEP host is restarted.
    b. Click **<Reset>** to discard your changes without applying or saving them.

6.5.3.5 Configuring Alarm Receipt – Users

If alarm delivery via SMTP is activated, use the Alarm Type check boxes on the Configuration/Users Action panel to assign delivery of email alarms to interested users and enter the destination email address for the user.

Required Permission: You must have the "May Choose Which Alarms to Receive" permission to configure alarm receipt for yourself. You must have super-user privilege to configure alarm receipt for other users.

6.5.4 Bridges

Once the interfaces are defined then you will need to place them into a bridge so that the SEP will understand what pairs of interfaces go together. You can have multiple bridges defined but only one can be active at a time. Additionally, you will need to remember what the settings were on the interfaces that you defined.

To create a new bridge:

1. Log in to the SEP host.
2. Select Bridges from the Setup folder (Figure 6-37).
3. Click **<New>**.
4. Enter the bridge name i.e., "VLAN Bridge".
5. From the drop down box, select the correct encapsulation type.
6. From the drop down box labeled Inside Interface, select the correct inside interface that was defined.
7. From the drop down box labeled Outside Interface, select the correct outside interface that was defined.
8. Check the Enable box, to set the bridge in active mode.
9. Click **<Apply>** to apply the changes.

Upon reboot or restart the configuration changes will be canceled.

10. Click **<Save>** to make the changes persistent to the SEP configuration file.
11. Click **<Reset>** to cancel any changes made**.**

If you have a bridge currently enabled, it will need to be disabled to apply the new defined bridge. There can only be one active bridge at a time on the SEP.

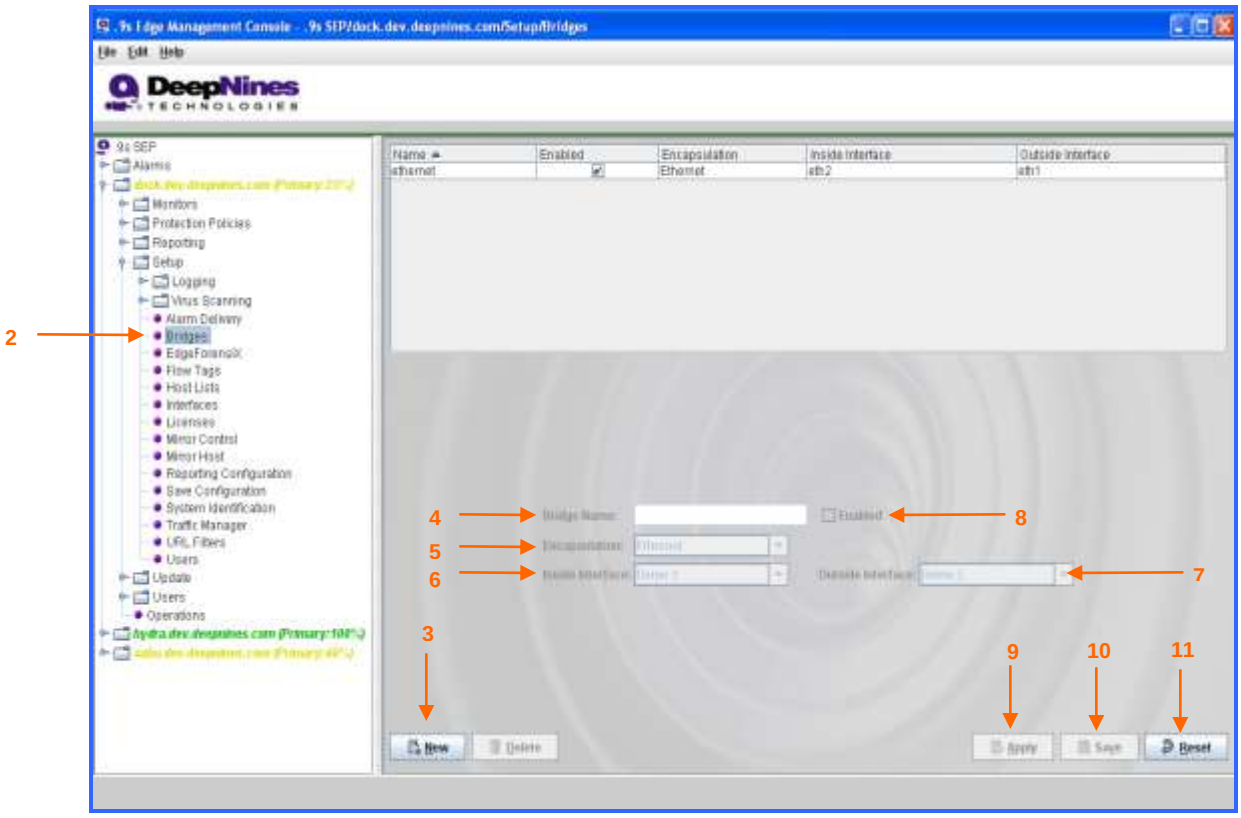


Figure 6-37. Bridges Screen

6.5.5 EdgeForensiX (EFX)

To enable forensic capture:

1. Verify that the unit on which to enable capturing is the active host.
2. Select Edge ForensiX from the Setup folder (Figure 6-38). The Edge ForensiX configuration screen is displayed.
3. Activate the Capture check box. The Overwrite check box determines what happens when the partition used to store captured data is full.
4. Activate by placing a check mark in the Overwrite check box to allow SEP to overwrite previously captured data with new data. This allows capturing forensic data to continue uninterrupted.
5. Clear by removing check mark in the Overwrite check box to instruct SEP to stop capturing forensic data when the partition is full. This allows previously captured data not to be lost.
6. Activate by placing a check mark in the Auto Offload checkbox to instruct SEP to automatically offload captured data to the EFX appliance periodically.
7. Clear by removing the check mark in the Auto Offload checkbox to halt data offloading.
8. Enter a Timeout value for SEP's connection to the forensic database. This should stay at default setting unless otherwise instructed by Deepnines Engineers.
9. Type the name of the EFX appliance or the IP address (IPv4 only) in the Database Host Address field.
10. Click **<Save>** to immediately apply your changes to a running system and to maintain the settings until you change them again, or perform one of the following:

a. Click **<Apply>** to immediately apply your changes to a running system but discard those changes the next time the SEP host is restarted.
b. Click **<Reset>** to discard your changes without applying or saving them.

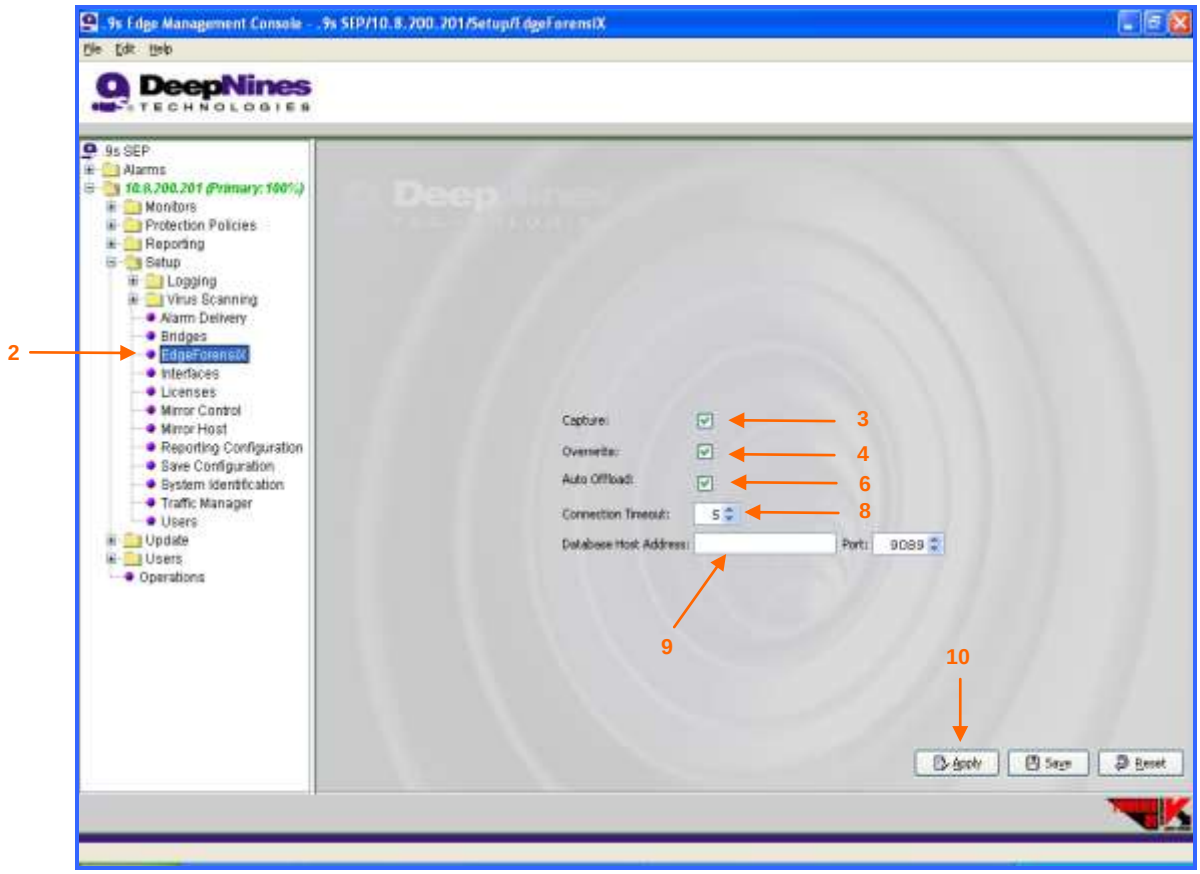


Figure 6-38. Edge ForensiX™ Configuration Display

NOTE

The displayed port number is the port on which the EFX appliance listens for packet offloads. Do not change this number.

For additional explanation on the Edge ForensiX Capturing System (EFX™), refer to the *"EFX Users Guide"*.

6.5.5.1 Turning On/Off Capturing

The Edge ForensiX tab of the Flow Specifier will allow the capture of either protocol headers or the entire payload of the packets matching that flow. This information is stored locally on the SEP in an EFX partition, and once the files reach 32MB in size they will automatically be transferred to the EFX Database System.

To enable this option, it is required that you have the Edge ForensiX Appliance as well as the SEP. Refer to the *"EFX Users Guide"* on how to capture packet information.

6.5.5.2 Monitoring Offloads to the EFX

The amount of files that have been offloaded from the SEP appliance to the EFX appliance is visible in the Edge ForensiX pane. To view up to date information:

1) Navigate to the Edge ForensiX pane from the Monitors section of the EMC (Figure 6-39).
2) The page will list the EFX host IP or hostname at the top of the pane.
3) The number of offloads is displayed below the host IP information.
4) More information can be obtained in the *"EFX Users Guide".*

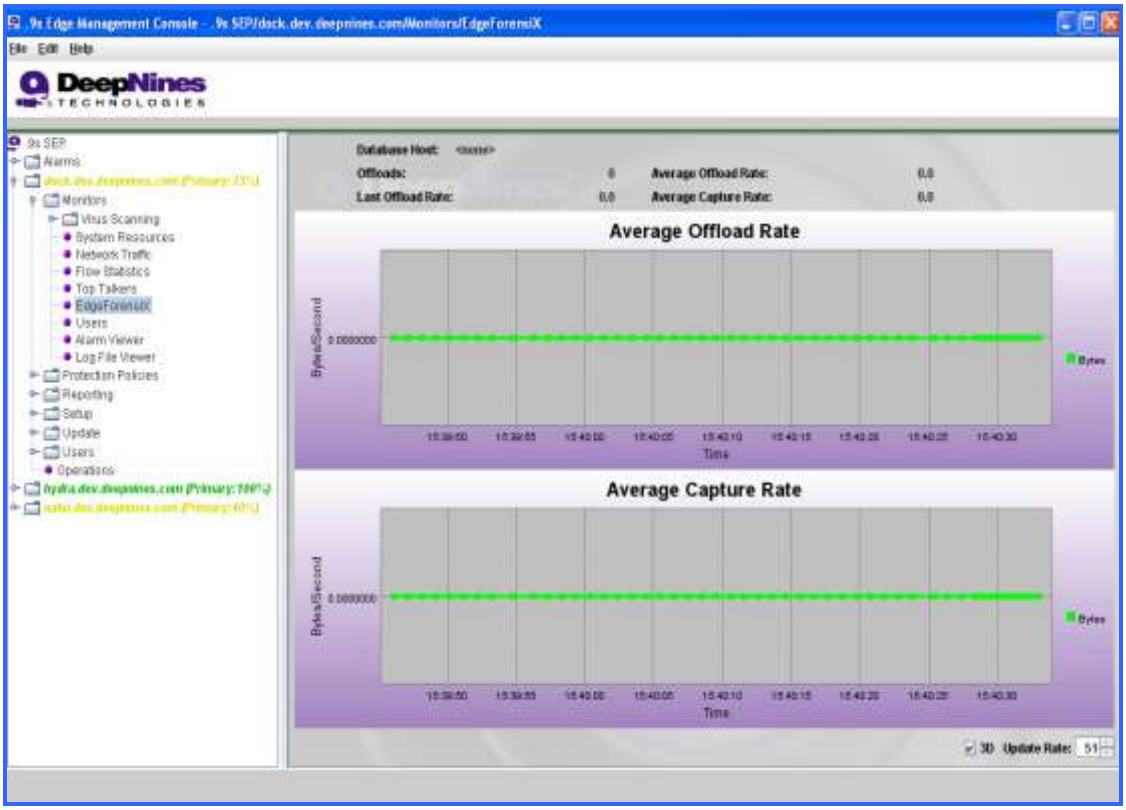


Figure 6-39. Edge ForensiX Screen

6.5.6 Flow Tags

A flowtag is a relatively short identifier (8 characters long) that can be added to the flow status information for a conversation (protocol session between a pair of hosts). Flowtags associated with a flow can then be used as additional fields to match the flow to control functions; that is, a Match Rule can be defined to require one or two specific flowtag values in order to match a flow.

To create a New Rule:

1. Log in to the SEP host.
2. Select Flow Tags from the Setup folder (Figure 6-40).
3. Click **<New Rule>**.
4. Select from two options in Tag Source Type: DPI Rule ID or by Directory Group.
5. From the drop down box, select Tag Name.
6. Click **<Save>** to save the changes.

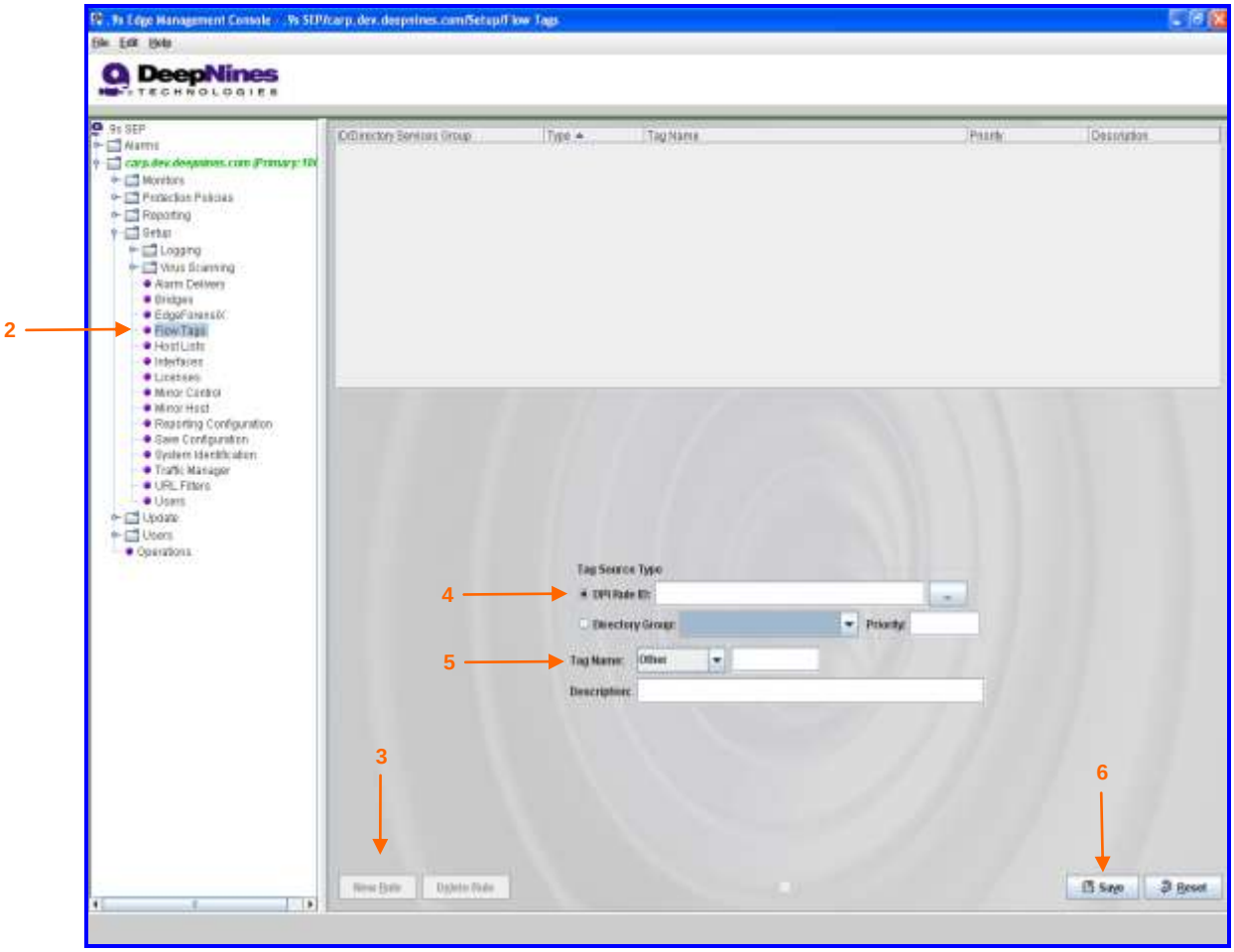


Figure 6-40. Flow Tags Screen

6.5.7 Hosts List

White and black hosts lists can be configured from this screen. Any HTTP requests that match an IP Address in the white list will be allowed access, while those HTTP requests that match an IP Address in the black list will be blocked.

To add a host address:

1. Log in to the SEP host.
2. Select Flow Tags from the Setup folder (Figure 6-41).
3. Select Trusted List or Untrusted List tab.
4. Click **<Add>**. A pull-down menu appears.
5. Click **<Save>** to save the changes.

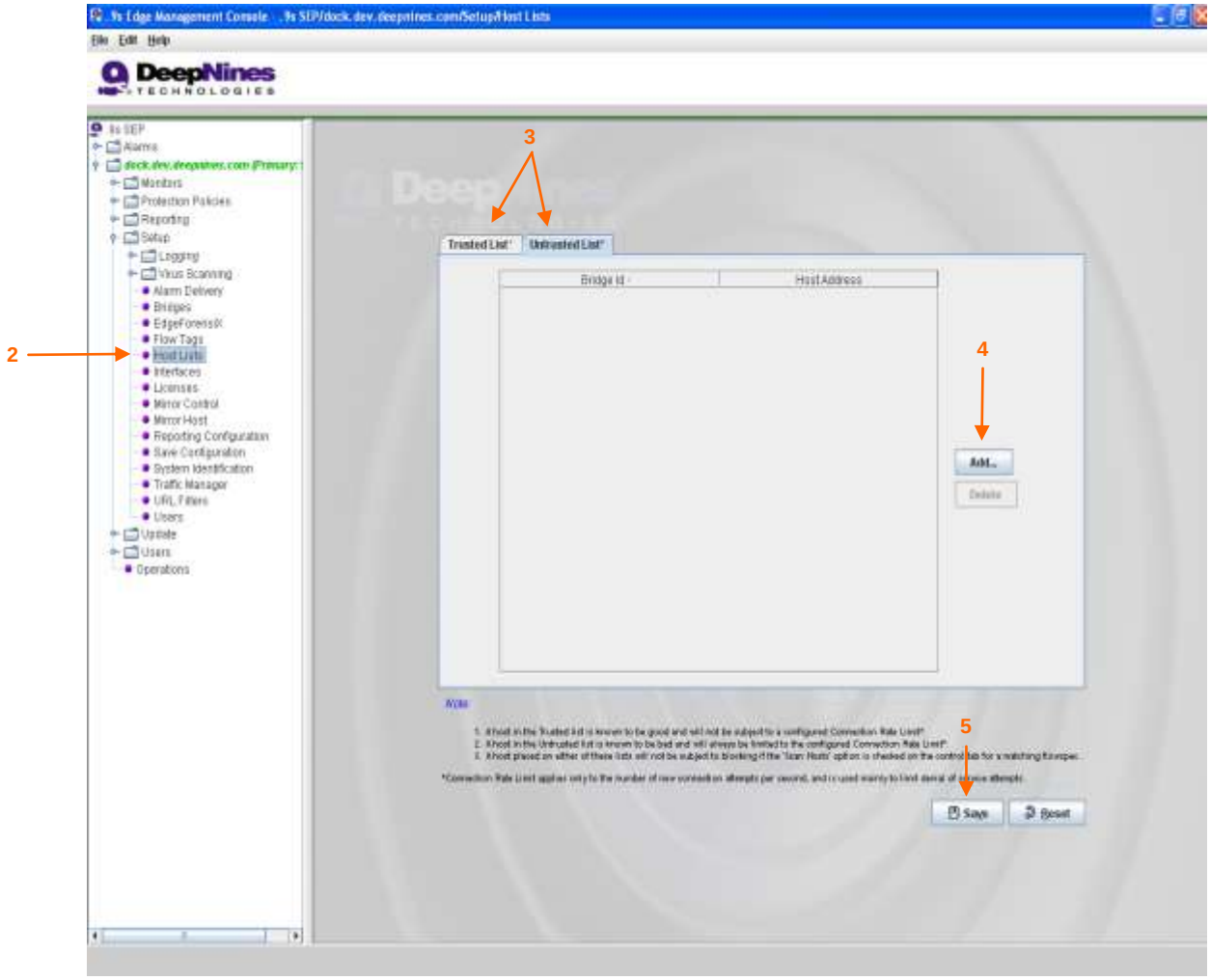


Figure 6-41. Hosts Lists Screen

6.5.8 Interfaces

The SEP has two main types of configurations; Frontline and Edge. The Edge series is designed to reside outside of the router and the encapsulation type will need to be configured on the outside and inside interfaces. The Frontline series is designed for the Ethernet environment and will need to be configured if the SEP is to reside on a VLAN trunk.

By default the SEP is configured for Ethernet for both the inside and outside interface. If the SEP is to be placed into a different location, perform the following steps to define a new interface type.

1. Log in to the SEP host.
2. Select Interfaces from the Setup folder (Figure 6-41).
3. Click **<New>**.
4. Enter the name of the interface i.e., “VLAN outside”.
5. The ZFT button is checked and cannot be changed.

There can only be one Administration Interface on the SEP.

6. Select the drop down box to select the encapsulation type (Table 6-15).

AAL5	Used for Frontline Series on connections that are ATM.
CHDLC	Used for Frontline Series on Internet connections that is communicating from one Cisco router to another Cisco Router.
Ethernet	Default Edge Series Encapsulation Type
Ethernet 1Q	For Edge Series that need to reside on a VLAN trunk connection. It allows for packet processing while looking at the VLAN tag ID.
HDLC	Used for Frontline Series on Internet connections that is linked together with non-Cisco routers.
Raw IP	For Frontline Series using clear channel Internet connections.

Table 6-15. Encapsulation Types

7. Select on which side of the SEP the interface will reside; Outside (WAN) or Inside (LAN).
8. Insert the logical device from the system. Example; Eth1, HDLC1, etc.
9. Click **<Apply>** to apply the changes.

NOTE

Upon reboot or restart the configuration changes will be canceled.

10. Click **<Save>** to make the changes persistent to the SEP configuration file.
11. Click **<Reset>** to cancel any changes made.

NOTE

You cannot have duplicating interfaces defined. Thus you only need to define a new interface(s).

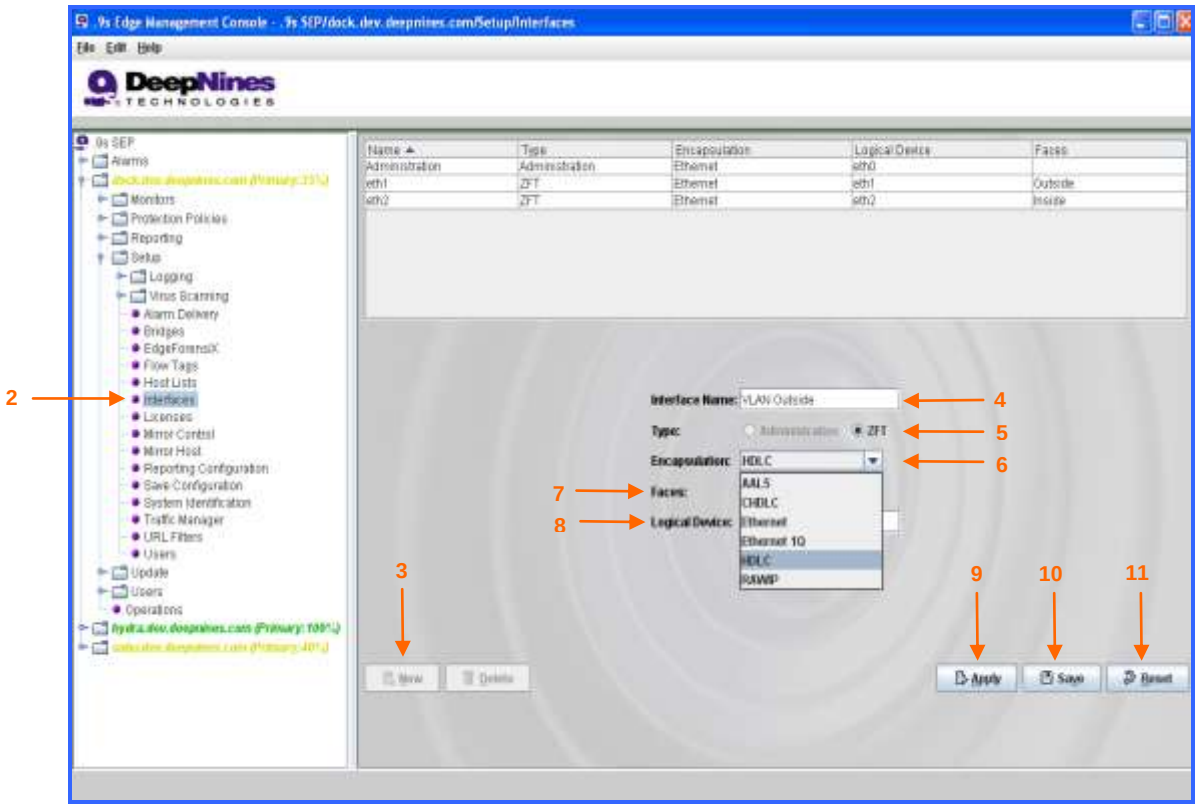


Figure 6-41. Interfaces Screen

6.5.9 Licenses

For complete information on licenses, go to Chapter 4, *"License Setup".*

6.5.10 Mirror Control

Mirror Control is a duplicate SEP that acts as a secondary or backup applicable only to High Availability (HA) environments.

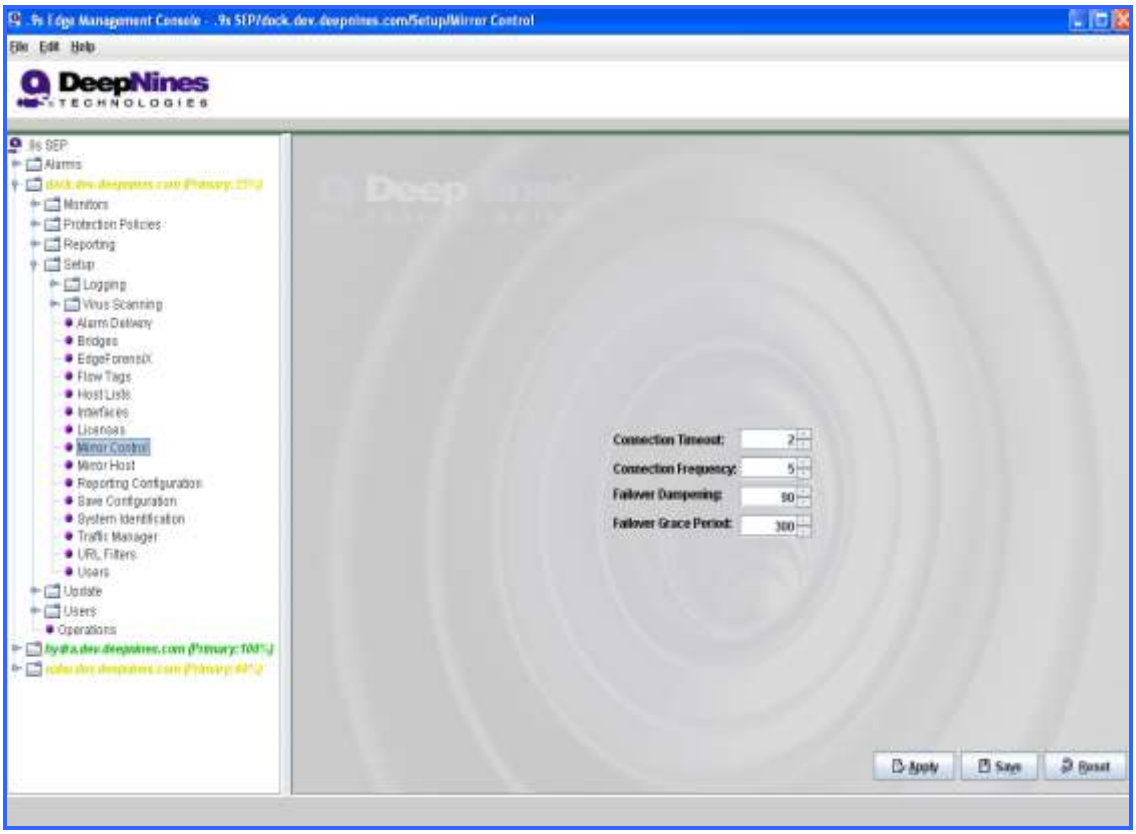


Figure 6-42. Mirror Control

Option	Description
Connection Timeout	This is how long a SEP waits until giving up each time it tries to establish a new connection to the configured mirror SEP.
Connection Frequency	The connection retry interval is how long the SEP waits between attempts to establish a connection to a configured mirror SEP.
Failover Dampening	This is how long before a SEP will become primary again after changing to secondary.
Failover Grace Period	The grace period timeout is the length of time after the SEP first becomes primary that it will accept as valid in-progress TCP connections for which it did not see the connection setup.

Table 6-16. Mirror Control Options and Descriptions

6.5.11 Mirror Host

Setting the Mirror Hosts for the SEP's to be placed into a high availability configuration is a two-step process.

To set the Mirror Host on SEP unit 1 (Figure 6-43):

1. Log in to the SEP host to be the Primary Unit.
2. Select Mirror Host from the Setup folder.
3. Enter the IP address of the SEP unit 2 or alternate SEP.
4. Click **<Save>** to immediately apply your changes to a running system and to maintain the settings until you change them again, or click one of the following:
   a. Click **<Apply>** to immediately apply your changes to a running system but discard those changes the next time the SEP host is rebooted.
   b. Click **<Reset>** to discard your changes without applying or saving them.

To set the Mirror Host on SEP unit 2 (Figure 6-41):

1. Log in to the SEP host to be the Alternate Unit.
2. Select Mirror Host from the Setup folder.
3. Enter the IP address of the SEP unit 1 or primary SEP.
4. Click **<Save>** to immediately apply your changes to a running system and to maintain the settings until you change them again, or click one of the following:
   a. Click **<Apply>** to immediately apply your changes to a running system but discard those changes the next time the SEP host is rebooted.
   b. Click **<Reset>** to discard your changes without applying or saving them.

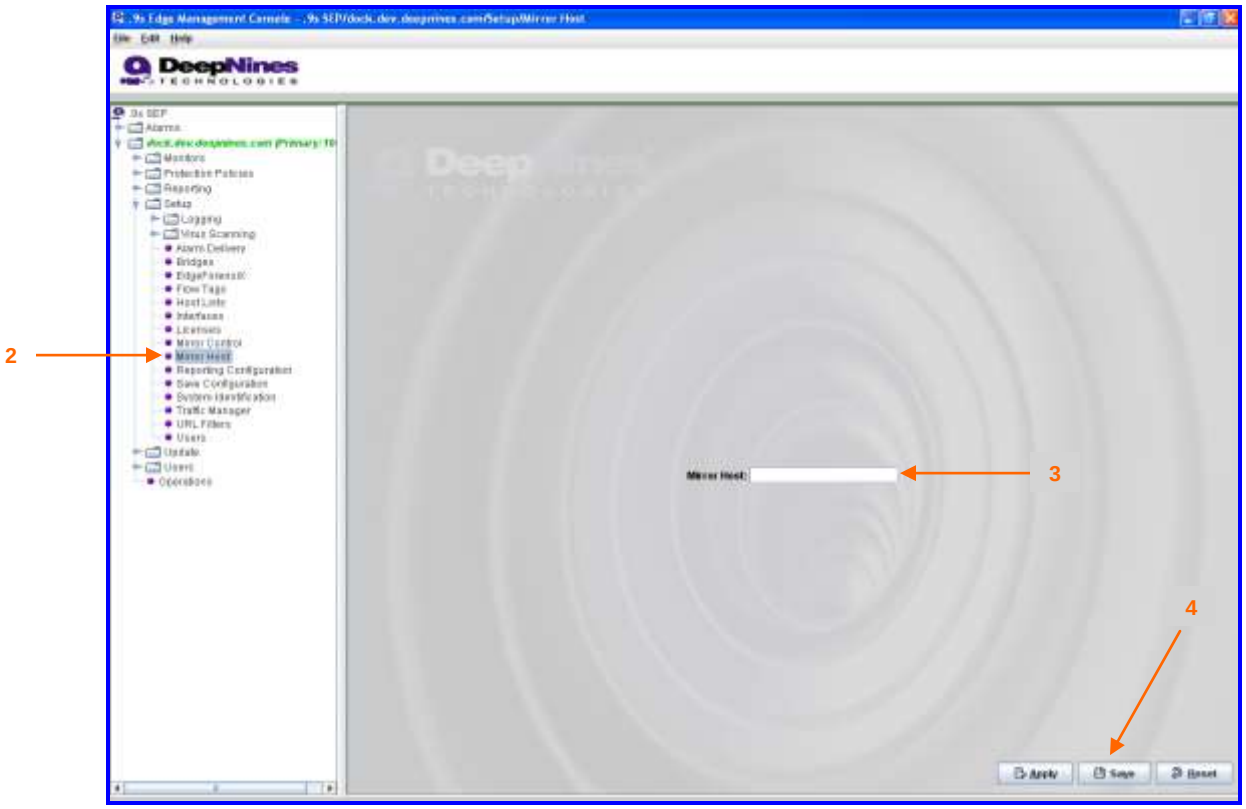


Figure 6-43. Mirror Control

6.5.11.1 Viewing Systems Health

Each SEP unit continuously monitors its own health and can report on its condition.

To quickly display the health level of any SEP host:

1. Log in to the host to monitor.
2. Locate the host name in the Command Explorer pane of the Edge Management Console and position the mouse cursor over the name. The unit's health is displayed in a pop-up that disappears when you move the mouse cursor off the name.

100%	The SEP unit is operating normally.
60%	The SEP unit is operating in a degraded condition, but it is still capable of functioning.
40%	SEP has detected an external fault, such as a failed internal/external link.
35%	One or more of the SEP Virus Scanning daemons is not running
25%	Available memory (RAM) is below 5% of the total available memory
20%	The Security Edge Platform Traffic Manager is not running
10%	SEP has detected a possible intrusion, the signature of a key system file has changed, the permissions or ownership of a key system file has changed, or suspicious files have been detected.

To view complete system health statistics:

1. Log in to the host whose health is to be monitored.
2. Select System Resources from the Monitors folder (Figure 6-44).

Figure 6-44. System Resources Screen

6.5.11.2 Automatic Mirroring Configuration Changes

When both high-availability SEP units are running, configuration changes made to one are automatically mirrored to the other. Changes may be made to either the primary or alternate unit.

If one of the SEP units is not running, configuration changes are not mirrored and must be made to the other unit after it boots.

SEP mirrors the following configuration changes:

Alarm and audit changes
Remote log host changes
Changes and additions to SEP user profiles
Changes and additions to flow specifiers
Changes and additions to static blocking rules
Changes to virus scanning messages
Changes to virus scanning engines
Virus scanning signature updates

6.5.12 Reporting Configuration

The Reporting Configuration option (Figure 6-45) allows administrators to clean or purge reporting databases for data that is older in nature. By default the three different reports will purge automatically every 15 days. This is user-configurable to allow more or less reporting time in the database.

The available configurable options are:

Save Anti-Virus Report up to:	Set to 15 days by default.
Save DPI Signatures Report up to:	Set to 15 days by default.
Save Network Anomaly Report up to:	Set to 15 days by default.
Run Clean-up Script Everyday at:	Set to every hour by default.
Purge Now Buttons	Will instantly purge the database regardless of configured days.
Purge All Reports:	Will purge all of the report data for AV, DPI and Network Anomalies Reports.
Delete All Reports:	Will delete any of the previously queried reports that are still on the system.

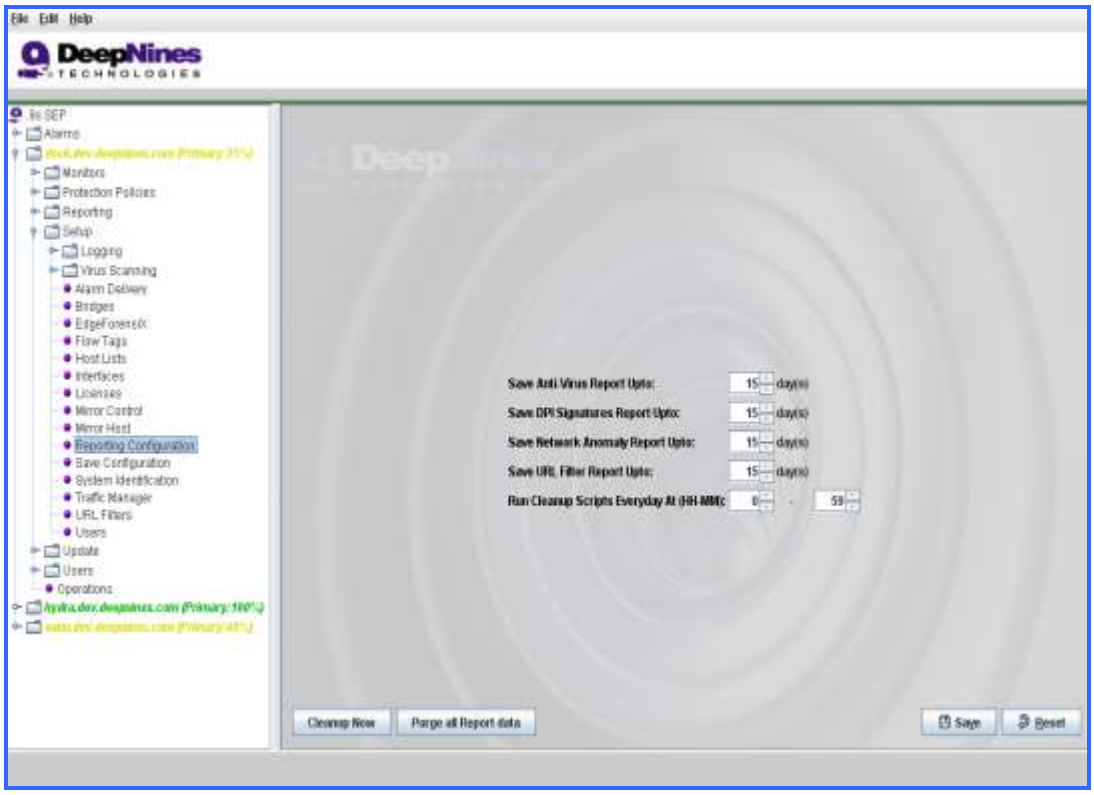


Figure 6-45. Reporting Condition Screen

The reporting system that resides on the SEP is very robust and contains detailed information. It is recommended to leave the default settings in place and to save copies of the reports in HTML format for historical reporting purposes.

6.5.13 Save Configuration

The SEP User Interfaces allows you to export or import SEP configuration files.

To export a configuration file:

1. Log in to the SEP host.
2. Select Save Configuration from the Setup folder.
3. Select Export.
4. Navigate to the local system folder that you want to save the configuration file to.
5. Press **<Save>**.
6. The SEP will encrypt the configuration file when the export occurs, so you will need to set a password.
7. Confirm password and Select **<OK>**.

To import a configuration file:

1. Log in to the SEP host.
2. Select Save Configuration from the Setup folder.
3. Select Import.
4. Navigate to the local system folder that you have saved the configuration file.
5. Press **<Open>**.

You will be prompted, stating that the entire configuration will be imported and all components of the SEP will be shutdown and restarted. This will momentarily stop traffic on the network while the import is made.

7. Click <Yes> when prompted to modify the entire configuration file.
8. The SEP will decrypt the configuration file when the import occurs, so you will need to enter your password.
9. Confirm password and click **<OK>**.
10. Click **<Yes>** or **<No>** if you want to replace configuration file on host <hostname>.

6.5.14 System Identification

The SEP System Identification configuration options include setting the default gateway for email alarm notification, specifying the IP address for the SEP administrative interface, and assigning cluster and node IDs to SEP units.

To set SEP System Identification Configuration options:

1. Log in to the SEP host.
2. Select System Identification from the Setup folder (Figure 6-46).

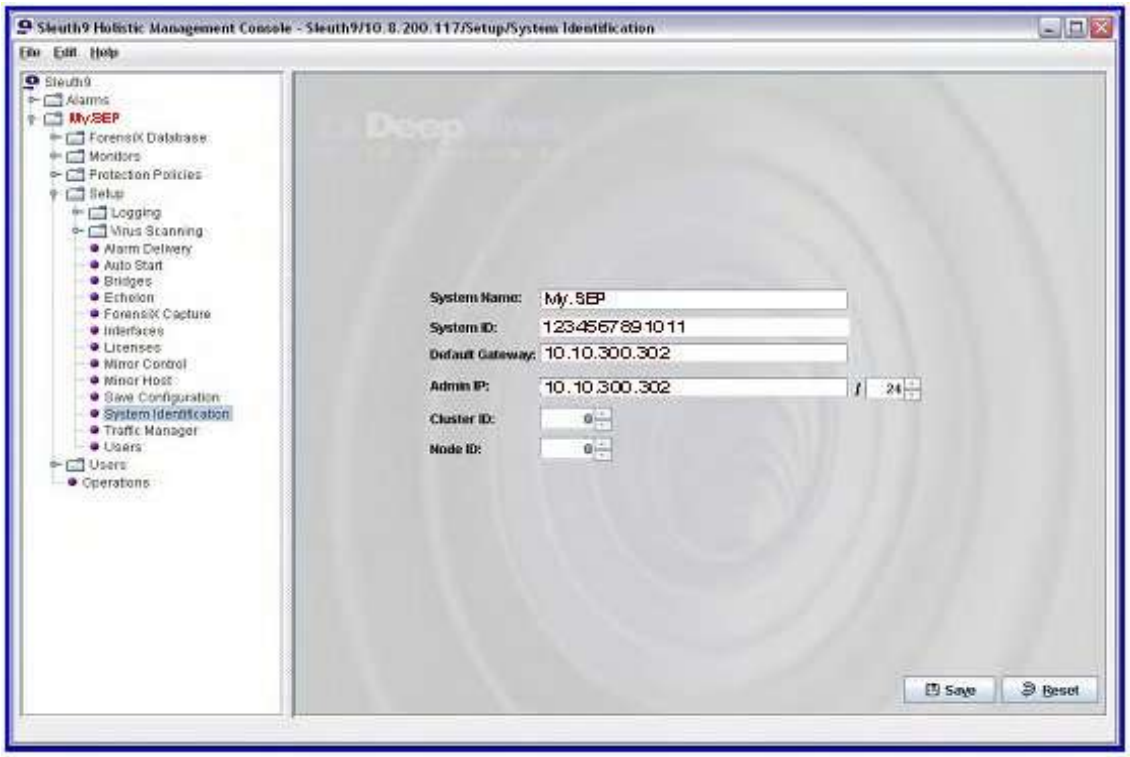
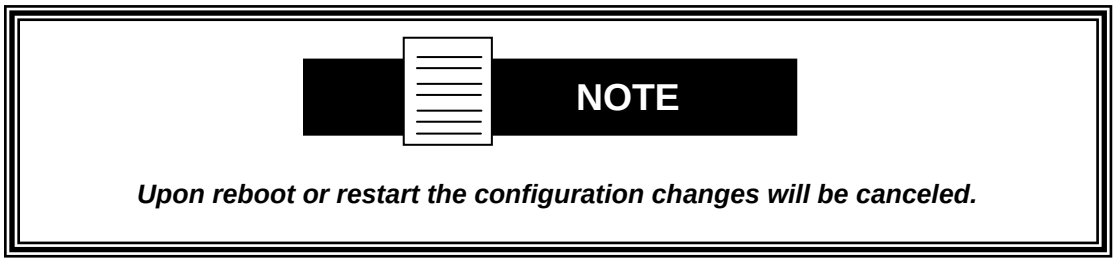


Figure 6-46. System Identification Screen

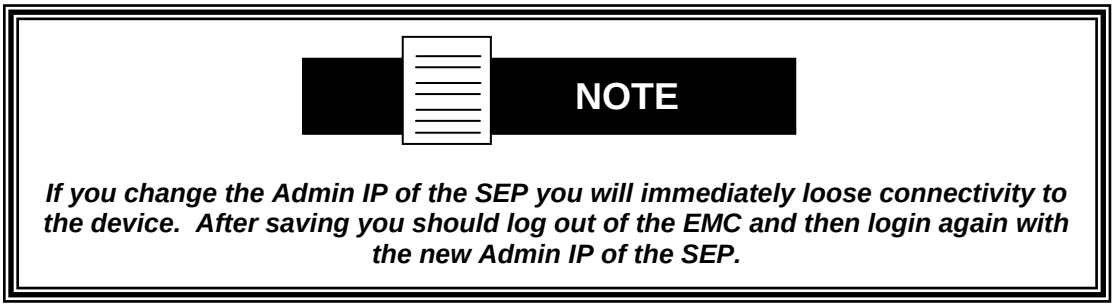
Option	Description
System Name	The unqualified name of the SEP host machine
System ID	This number is automatically generated by the SEP and cannot be changed.
Default Gateway	The IP address of the default system gateway.
Admin IP	The IP address and optional subnet mask of the SEP unit's administrative interface.
Cluster ID (Optional)	An integer used to identify a SEP cluster. When one or ore SEP clusters are in place, a cluster ID can be used to identify the source of alarms and log messages.
Node ID (Optional)	An integer used to identify a SEP node. When one or more SEP units are in place (for example, in high-availability configurations) a node ID can be used to identify the source of alarms and log messages.

Table 6-16. System Identification Options and Descriptions

3. Enter data in the appropriate fields displayed.

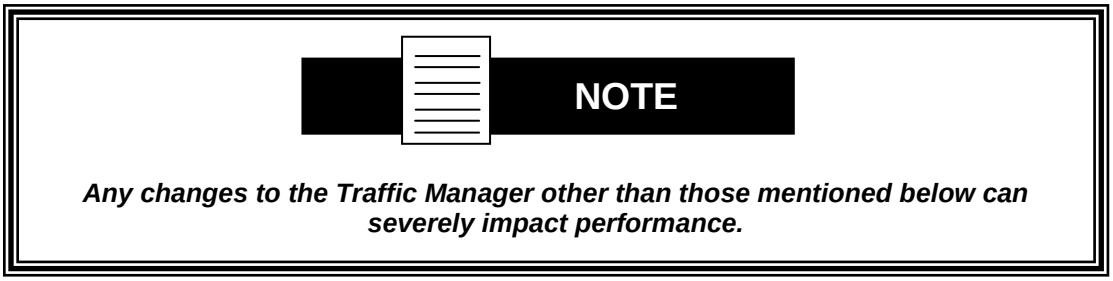


4. Click **<Save>** to make the changes persistent to the SEP configuration file.
5. Click **<Reset>** to cancel any changes made.


NOTE
If you change the Admin IP of the SEP you will immediately loose connectivity to the device. After saving you should log out of the EMC and then login again with the new Admin IP of the SEP.

6.5.15 Traffic Manager

The SEP Traffic Manager contains variables that are set by Deepnines Research and Development for optimal performance. Under certain conditions changes or adjustments may need to be made for the respective network.



To set SEP Traffic Manager Configuration options:

1. Log in to the SEP host.
2. Select Traffic Manager from the Setup folder
3. Apply changes (if applicable) to fields (Figure 6-47). Options and their descriptions are listed in Table 6-17.
4. Click **<Apply>** to apply the changes.
5. Click **<Save>** to make the changes persistent to the SEP configuration file.
6. Click **<Reset>** to cancel any changes made.

Forwarding Mode	The SEP has two modes of operation; Normal and Bypass. The default state is in Normal operation in which all traffic pass through the Traffic Manager. In Bypass mode, no traffic is examined or can be blocked and will pass from one interface to the other.
Scan Threshold	**<NEED DATA>**
Scan Window (in mins)	**<NEED DATA>**
Scanner Block Timeout (in mins)	**<NEED DATA>**
Start of Morning	**<NEED DATA>**
Start of Afternoon	**<NEED DATA>**
Start of Evening	**<NEED DATA>**
Start of Night	**<NEED DATA>**
Flowspec Schedules	**<NEED DATA>**
Adaptive Window Open	Set to 3x historical limit by default. This controls the rate at which the adaptive rate control window opens.
Adaptive Window Close	Set to 5x historical limit by default. This controls the rate at which the adaptive rate control window will close.
Note: If there are frequent spikes in traffic on your network, changing the open to 10 and the close to 50 may aid in the amount of blocking that is occurring from instant packet rate controls.	
Metrics Delta-T	**<NEED DATA>**
Instantaneous Tau	**<NEED DATA>**
History Tau	**<NEED DATA>**
Pending Setup Timeout (in secs)	**<NEED DATA>**
Current Activity Timeout (in secs)	**<NEED DATA>**
IPv4 Flowtable Slots	**<NEED DATA>**
IPv6 Flowtable Slots	**<NEED DATA>**

IPv4 KGH Slots	**<NEED DATA>**
IPv6 KGH SLots	**<NEED DATA>**
Maximum Fragments	Set to 3 fragments per packet by default. If fragments are usually seen on your network this may need to increase to 5. It is not recommended to increase the fragments to over 5, as this is usually a sign of another networking problem.
Inactive Removal Timeout (in secs)	**<NEED DATA>**
Timed Metrics Report Passes	**<NEED DATA>**
Do ARP	**<NEED DATA>**
Enable Host State	**<NEED DATA>**

Table 6-17. Traffic Manager Options and Descriptions

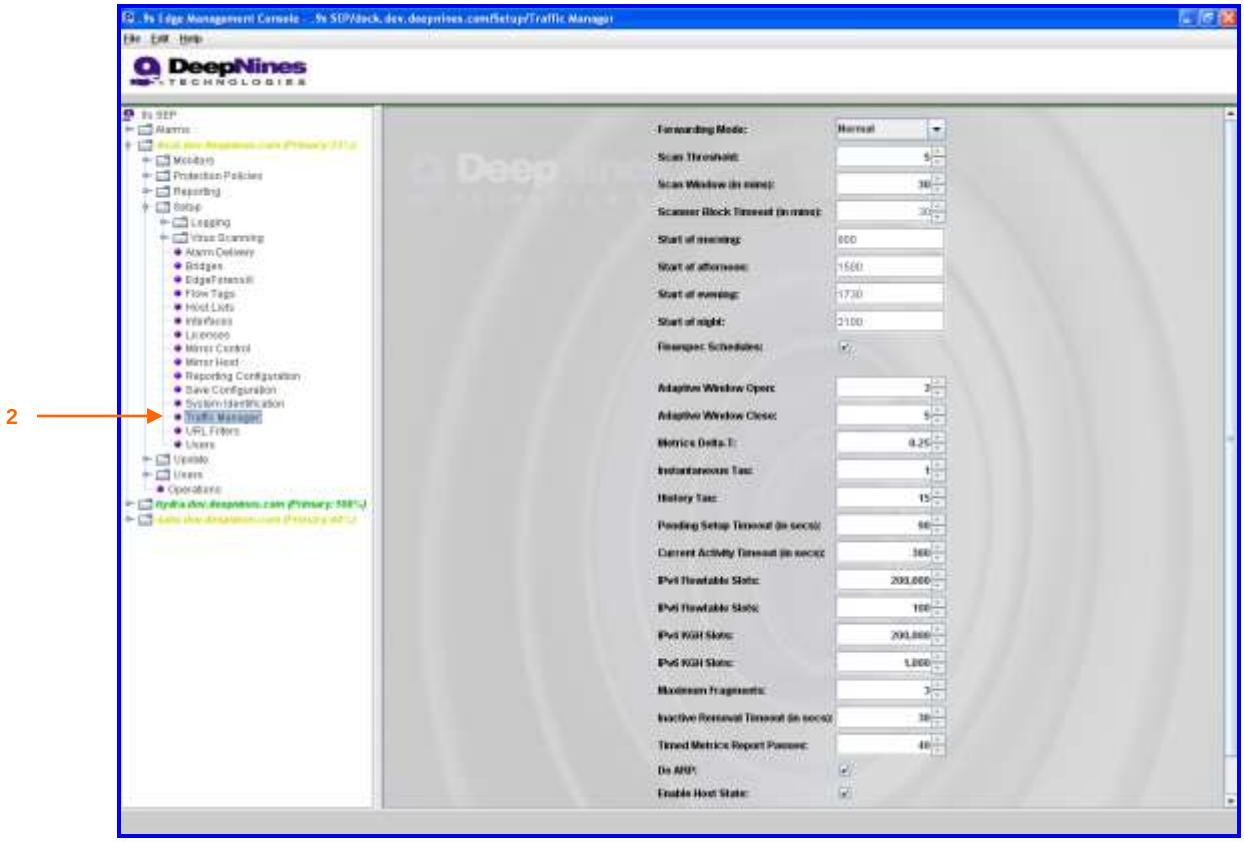


Figure 6-47. Traffic Manager Screen

NOTE

Upon reboot or restart, the configuration changes will be canceled.

6.5.16 URL Filters

URL Filtering controls HTTP traffic by inspecting the URLs being requested. It provides three layer filtering based on user-created admin black and white lists, Website categories, and other third-party blacklists. URL Filtering provides the following actions for HTTP requests; Allow, Block and Redirect. The URL Filter screen is displayed in Figure 6-48.

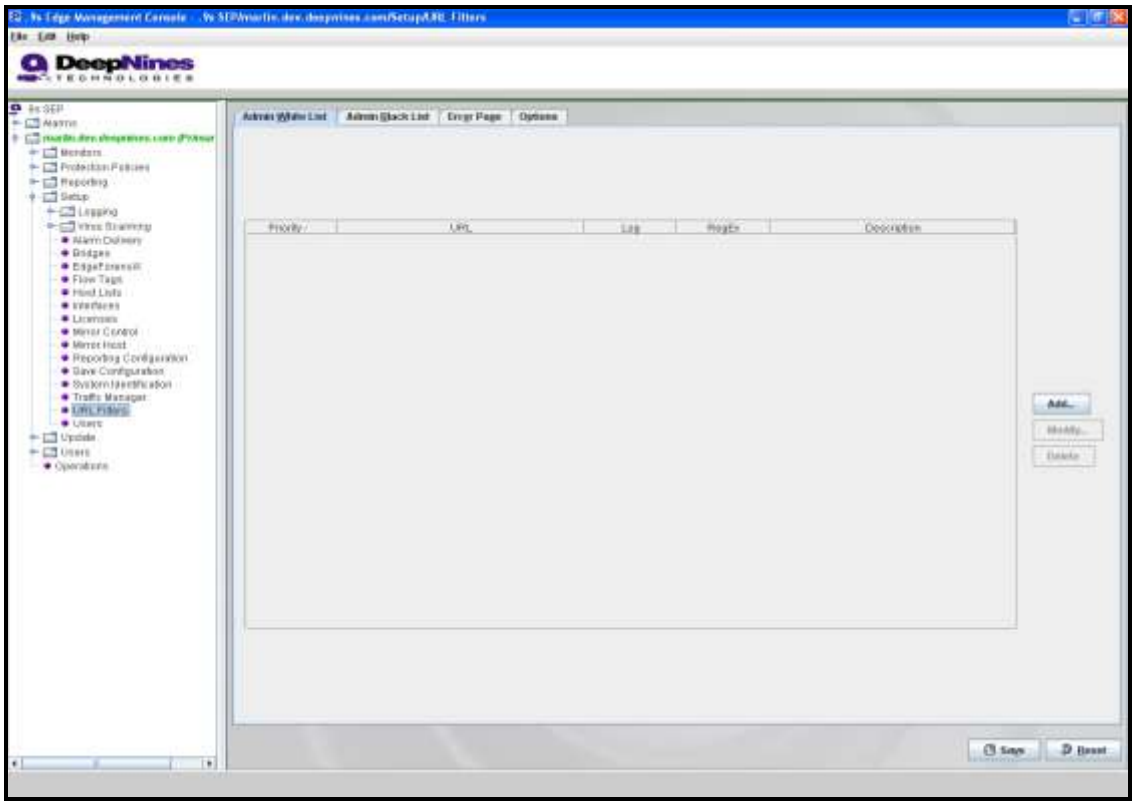


Figure 6-48. URL Filter Screen

Option	Description
White List	User-requested URLs that are matched against the white list are allowed.
Black List	User-requested URLs that are matched against the black list are blocked.
Error Page	Allows the user to create a template for blocked pages returned to users.
Options	Allows the user to configure URL filtering.
Use Log Only Mode	URL filtering actions are logged only but not executed.

Table 6-18. URL Filters Tabs and Descriptions

6.5.17 Users

For complete information on users, go to Section 6.7, *"Users".*

6.6 Update

The Update section of the Command Explorer provides setup configuration options for DPI Signature Updates and URL Server Updates.

6.6.1 DPI Signature Updates

DPI Signature updates can be obtained directly from the open source community. By registering at snort.org and obtaining an oink code, one can get the latest rules from the community. The DPI Signature Updates screen is displayed in Figure 6-49.

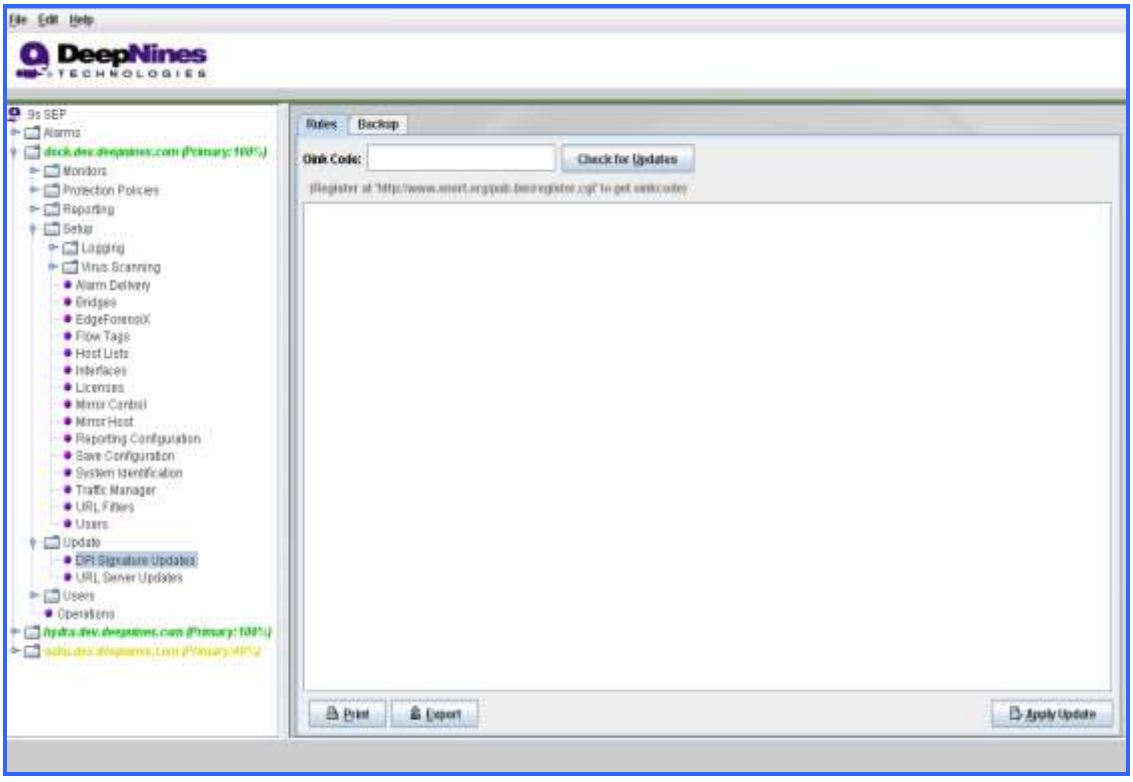


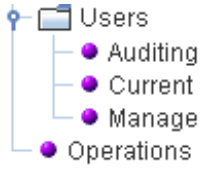
Figure 6-49. DPI Signature Updates Screen

6.6.2 URL Server Updates

Deepnines Technical Services researches and develops new rules that will stop a number of threats or unwanted behavior and will release those on its website. Additionally, Deepnines Technical Services will send out email alerts on the new available rules and how they can be obtain for current customers.

6.7 Users

The Users section of the Command Explorer provides setup configuration options for Auditing, Current, Manage Users, and Operations.



SEP administrators are required to log in to a SEP host before they can access system information or make changes to the system configuration. Users must have an account on each SEP host they are to have access to.

NOTE

Required Permission: You must have the "May Perform User Management permission to perform the operations described in this section. Users with this permission are SEP super users and can assign any permission to other users. There must be at least one SEP super user for each SEP host.

6.7.1 Creating/Maintaining User Accounts

When you create a user account, you provide the SEP user with a user ID and password that is used to log in to the SEP host. You must create a user account on each SEP host that a user will access. User accounts may also include the user's email address and specify the alarm types of interest to the user. When email and alarm types are configured for a SEP user, SEP automatically notifies the user when alarms of interest are generated.

Additionally, user accounts include permissions, allowing you to limit user access to actions appropriate for that user. You can create user accounts from either the Setup folder or the Users folder.

To create a user account:

1. Verify that the unit on which to create the new user account is the active host. Use the System Resources tab in the Command Explorer to view information pertaining to the status of the currently connected SEP.
2. From the Setup folder, select Users. User configuration options appear in the Action pane.
3. From the Users folder, select Manage. User configuration options appear in the action pane.

NOTE

There are two locations to manage users. The Setup folder and the Users folder in the Command Explorer window both have action pane windows to manage and configure users.

4. Click **<New>**. The Manage Users configuration screen is displayed (Figure 6-50).

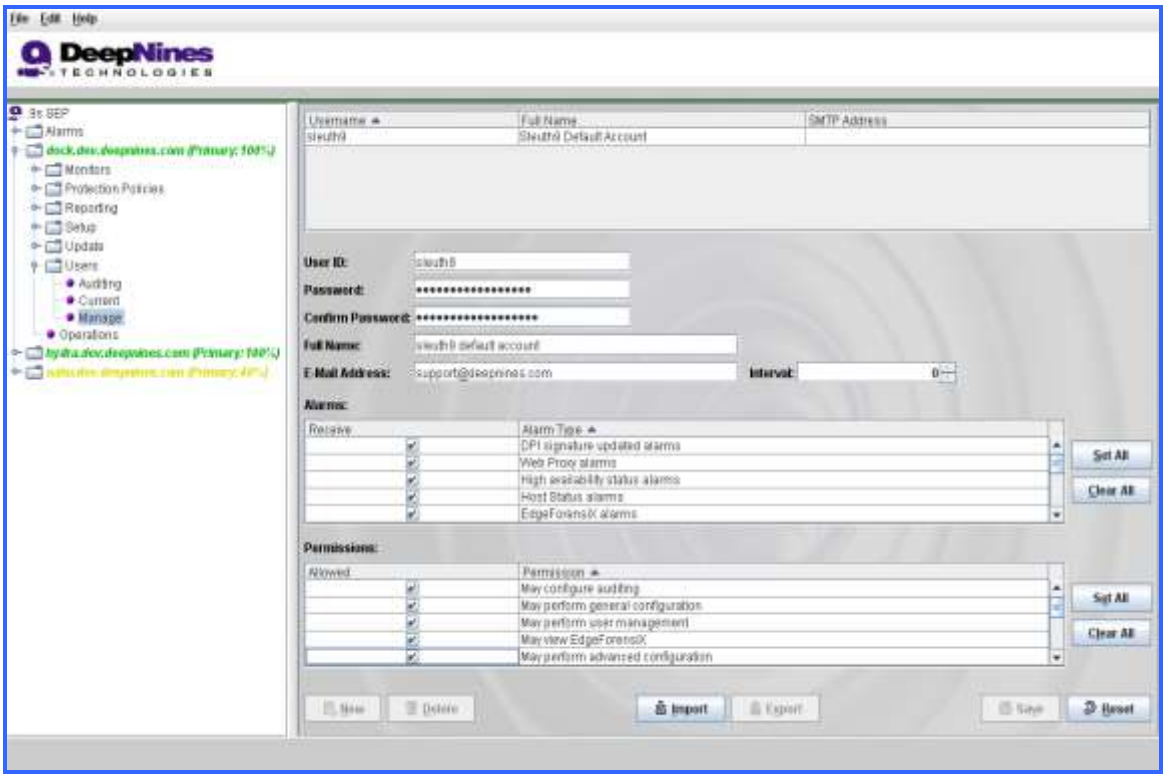


Figure 6-50. Manage Users Screen

5. Enter user information following the guidelines in Table 6-19.

Field	Requirements
User ID	Minimum length: 3 characters. Maximum length: 32 characters. Not case sensitive.
Password	Minimum length: 8 characters. Maximum length: 32 characters. Must contain at least 2 alphabetic characters and 1 numeric or special character. Cannot contain the user ID or any permutations of the user ID.
Verify Password	Re-enter the password.
Full Name	Optional no minimum length Maximum length: 256 characters
Email Address	Optional used to deliver system alarms by email. No minimum length. Maximum length: 256 characters Must be one or more valid email addresses, including any scheme required for email server addressing or wireless message device access. Multiple email addresses can be separated by a space or a comma and must not exceed the maximum field length of 256 characters.

Table 6-19. Manage Users Fields & Requirements

All users can change their own password, full name, and SMTP address with these same steps.

6. If the user is to receive system alarms, activate the check box associated with the alarm of interest (Table 6-20). The Select All button offers the ability to activate all alarm check boxes. The Clear All button offers the ability to clear all the alarm check boxes.

Alarm Type	Contents
Authentication Alarms	Alarms generated when an attempt to log in to a SEP host fails.
Flow Specifier Alarms	Alarms generated when traffic levels reach the limits entered on any flow specifier that is configured to generate alarms.
Edge ForensiX System Alarms	Alarms generated when the partitions for the Edge ForensiX System are full.
High Availability Health Alarms	Alarms generated when the health level of a SEP host changes.
High Availability Status alarms	Alarms generated when a SEP host changes from primary mode to alternate mode or from alternate to primary.

Virus Detect Alarms	Alarms generated when a virus is detected.
Virus Signature Updated Alarms	Alarms generated when a virus signature is updated.

Table 6-20. Alarm Types

7. Assign permissions to the user by activating the check box associated with the permission to be granted (Table 6-21). The Select All button offers the ability to activate all permission check boxes. The Clear All button offers the ability to clear all permission check boxes.

Permission	**Meaning**
May choose which alarms to receive	The user may edit the Alarms section of the user account. Users must have this permission to assign or modify alarms for themselves.
May configure Edge ForensiX System	The user may access and make changes to the Configuration/EFX section of the Sleuth9 EMC.
May configure advanced logging	The user may access and make changes to the Configuration/Logging section of the SEP EMC.
May configure auditing	The user may access and make changes to the Users / Auditing Folder
May configure flow specifiers	The user may access and make changes to the Protection Policies/Flow Control section of the SEP EMC.
May perform advanced configuration	The user may access and make changes to the Configuration/Advanced section of the SEP EMC.
May perform general configuration	The user may access and make changes to the general Configuration section of the SEP EMC.
May perform system operations	The user may access and execute commands in the Operations section of the SEP EMC.
May perform user management	The user may create and edit user accounts. Users must have this permission to assign or modify permissions for themselves and other users. Users with this permission are SEP super users; there must be at least one super user account for each SEP host.
May view ForensiX database	The user may only view the Edge ForensiX database.
May view log files	The user may view SEP log files.
May view monitors	The user may access and view the action screens in the Monitors section of the SEP EMC.

Table 6-21. Permissions Types

Advanced logging options or changes may result in a negative impact to system performance or may fill the system logs exceptionally quickly. Deepnines strongly recommends that you assign this permission judiciously.

8. When you are finished configuring the user account, click **<Save>**.

6.7.1 Modifying User Accounts

You can modify any existing user account to change any information except the user name. If the username must be changed, delete the user account and create a new one.

To change your own alarm types, you must have the May choose which alarms to receive permission assigned to yourself. To change another user's permissions, you must have the May Perform User Management permission.

6.7.2 Deleting User Accounts

1. Verify that the unit that contains the user account to be deleted is the active host.
2. Log in to the SEP Host.
3. Select Users from the Users/Manage folder (Figure 6-51). Alternatively, select Manage from the Users folder.
4. In the user list at the top of the Action pane, select one or more user accounts to be deleted, and then click **<Delete>**.
5. Click **<Yes>** to confirm your action.

Any user who is assigned the May Perform User Management permission is a SEP super user. There must be at least one super user account on each SEP host. You cannot delete the only super-user account on any SEP host.

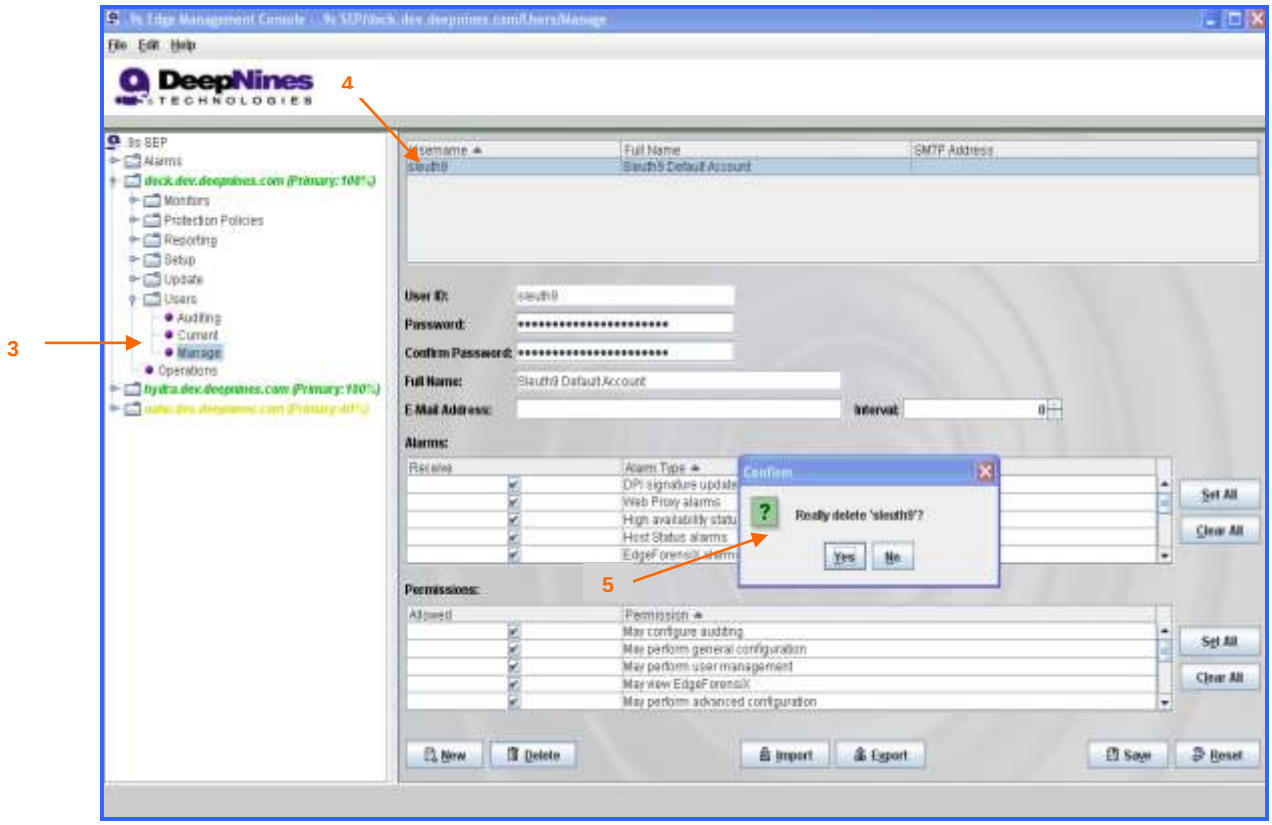


Figure 6-51. Manage Users Screen – Delete User Accounts

6.7.3 Viewing Current Users

You can view a list of all users who are currently logged in to the active SEP host. Up to 32 users can log in to a SEP host at one time.

To view a list of logged in users:

1. Verify that the unit on which to view logged in users is the active host.
2. Select **<Users>** from the Monitors folder (Figure 6-52). A list of users who are logged in appears in the Action pane. Alternatively, select **<Current>** from the Users folder.

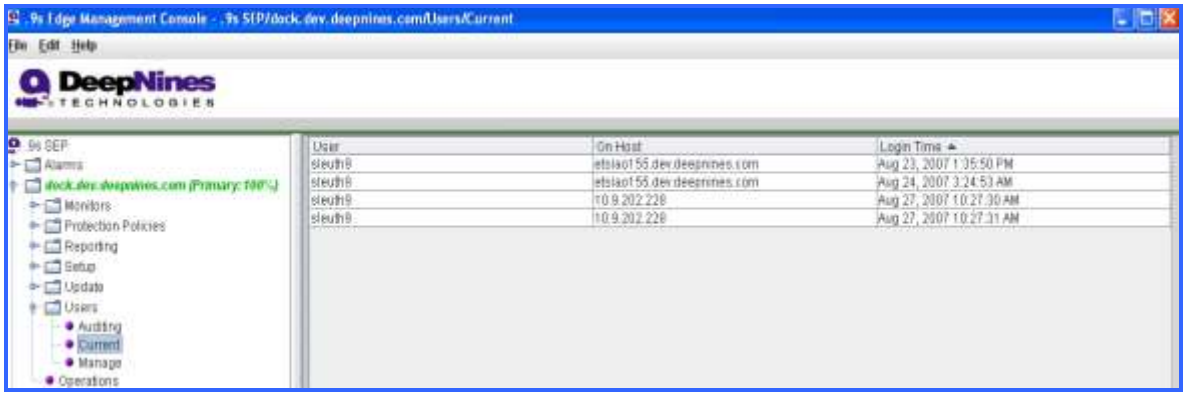


Figure 6-52. Viewing Current Users Screen

6.7.4 Exporting & Importing User Accounts

The Users management allows for exporting and importing of user account information for easy portability between systems and for backup purposes. The user information is stored in an encrypted file and can be saved to the local administrator's personal computer.

NOTE

You must be a super user to export and import users. Super users are all users assigned the" May Perform User Management" permission in the permissions section of user management.

To Export the User Database:

1. Select the users from the top user table that should be exported (Figure 6-53). CTRL-A selects all users, SHIFT allows for multiple selects. Only users that have been selected and highlighted will be exported.
2. Click the **<Export>** button to start the export procedure.
3. Enter the password key used to encrypt the file.
4. Click **<Save>**.

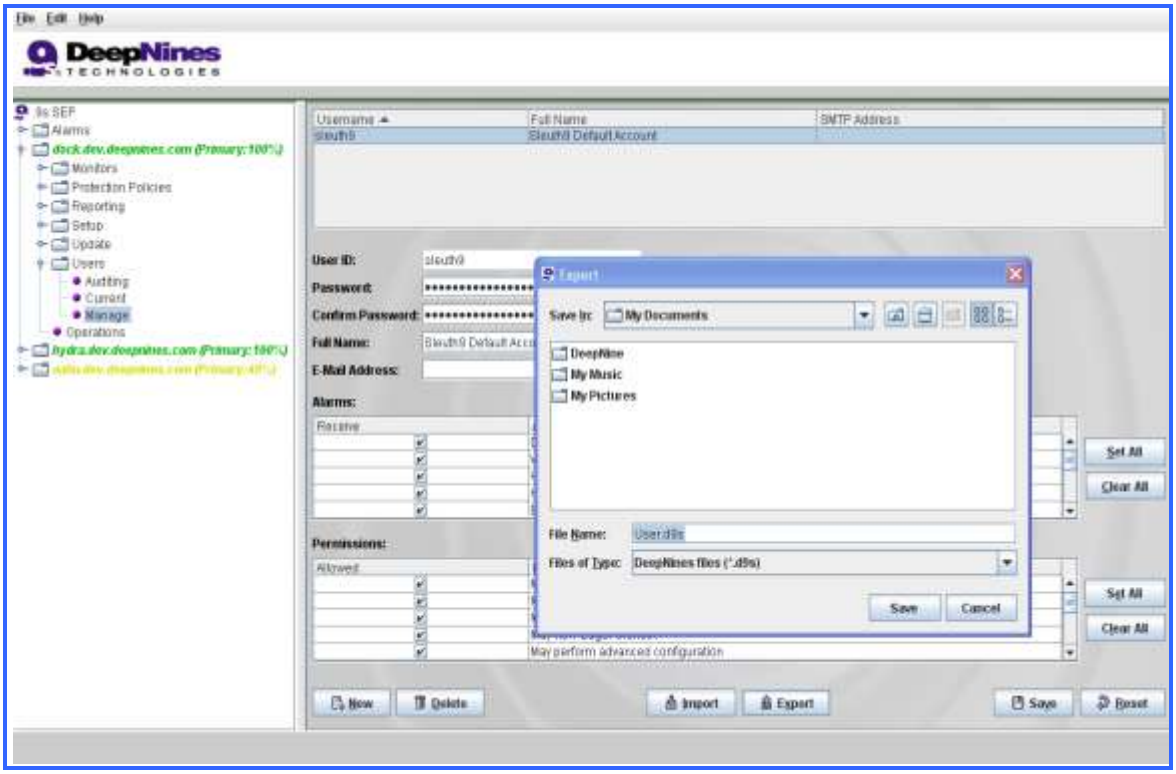


Figure 6-53. Export User Screen

NOTE

This password must be used to unencrypt the file for any future system imports of the users file.

To Import the User Database:

1. Connect to the correct active system intended to import the user database.
2. Open the Manage Users folder (Figure 6-54).
3. Click the **<Import>** button to start the export procedure.
4. Enter the password key used to encrypt the file.
5. Click **<Open>**.

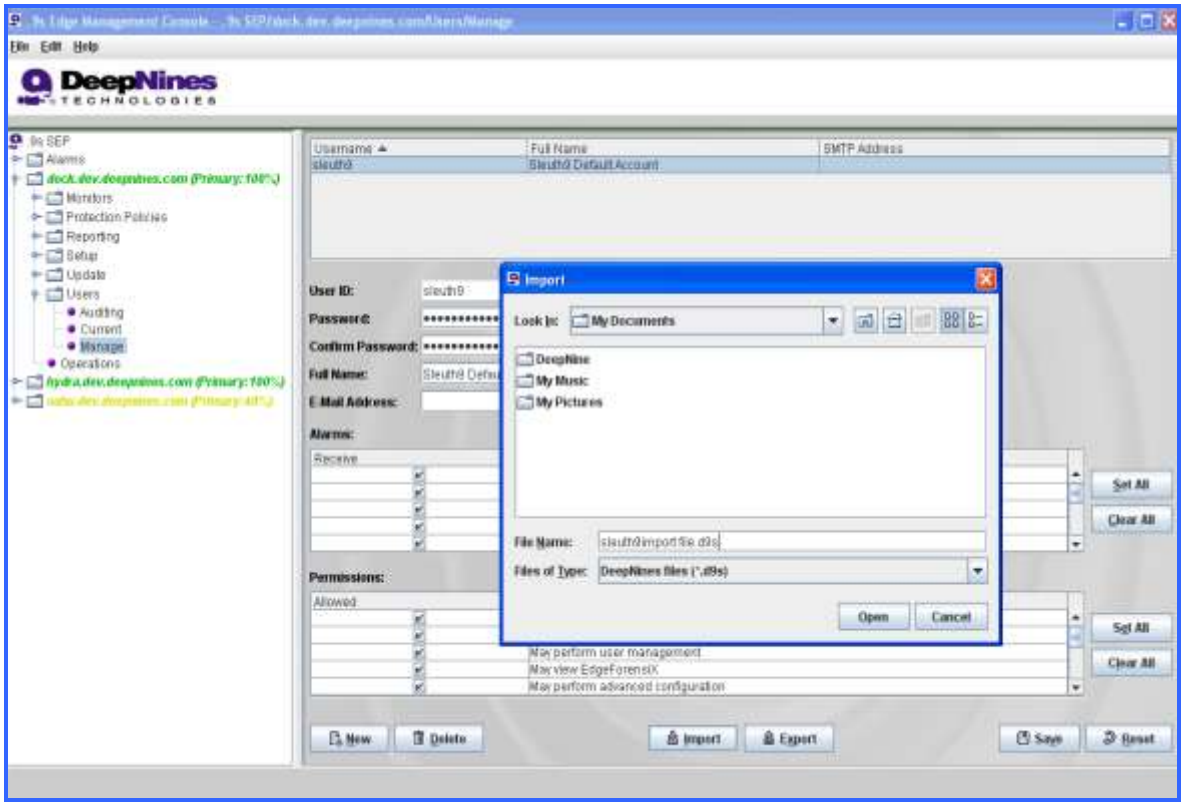


Figure 6-54. Import User Screen

NOTE

The same password used to encrypt the original export file must be used during the import procedure.

6.7.5 Configuring User Audit Information

User Audit Information is used to log the activity of users to the local system log. This provides accountability of all user activity.

NOTE

It is strongly suggested to give each administrator a individual account to control and monitor individual activities. Single or group logins do not provide accurate accountability of user activities.

1. To set audit logging options:
2. Verify that the unit on which to set general logging options is the active host.
3. Open the Users folder, and then click Auditing (Figure 6-55). The Audit Logging options screen is displayed.

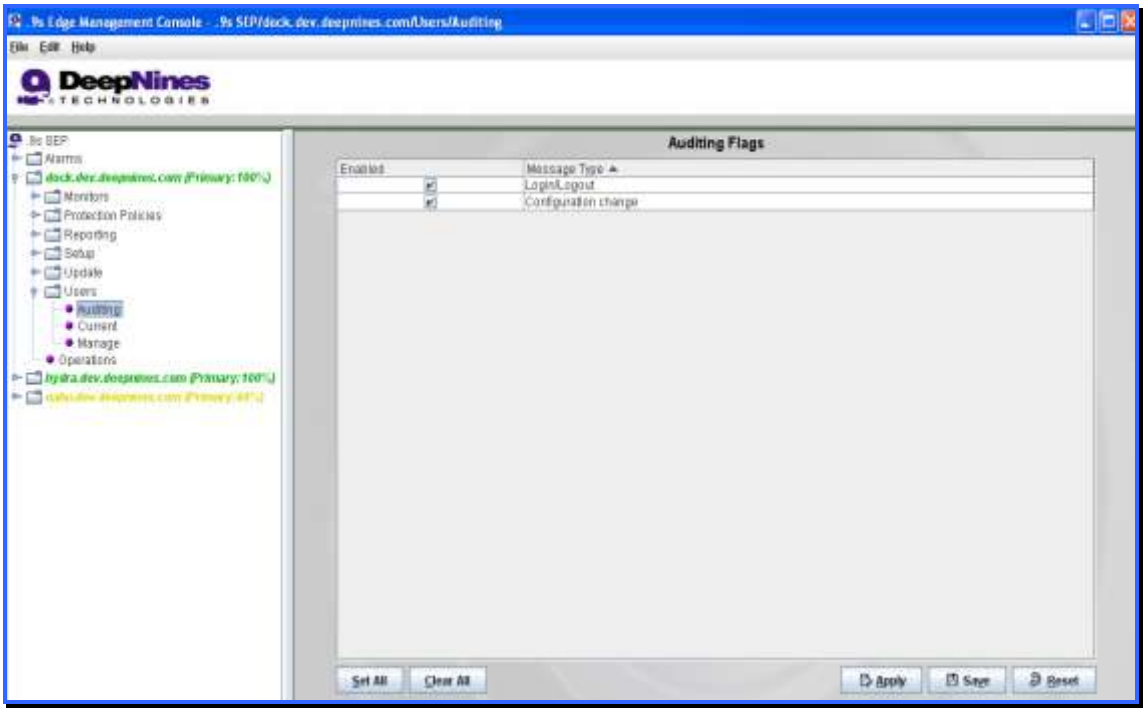


Figure 6-55. Audit Logging Options Screen

6.7.6 Viewing SEP Users Audit Information

SEP automatically maintains an audit trail that includes all user login information and all configuration change information as well as all failed login attempts. Audit information is written to the SEP log. For more information on SEP logging, see Section 6.5.1.3, “Viewing Log Files”.

6.7.7 Operations

Use the commands in the Operation section (Figure 6-56) of the EMC Command Explorer to start and stop SEP components.

NOTE

You must have the “May Perform System Operations” permission to execute the operations described in this section.

Figure 6-56. Operations Screen

6.7.7.1 Rebooting SEP

Before rebooting, be advised that although the Security Edge Platform is designed to run continuously, there may be times when you need to reboot the system.

The System: Reboot command brings the system down gracefully.

Networks with High Availability configurations, rebooting the primary SEP unit causes managed failover and the alternate unit assumes responsibility for managing traffic. As long as the primary unit remains in good health, rebooting the alternate unit has no effect on traffic flow.

To maintain accurately mirrored configurations, both primary and alternate SEP units must be running when configuration changes are made.

If only a single SEP unit is installed, traffic flow is halted while the system reboots.

To reboot the SEP system:

1. Verify that you are logged in to the platform to be rebooted and that it is the active host. Use the System Resources tab in the Command Explorer to view information pertaining to the status of the currently connected SEP.
2. Select System: Reboot from the Operation panel (Figure 6-57).
3. Click **<Yes>** to confirm your action.

If a Fail to Wire card exists, rebooting the system will also not stop traffic.

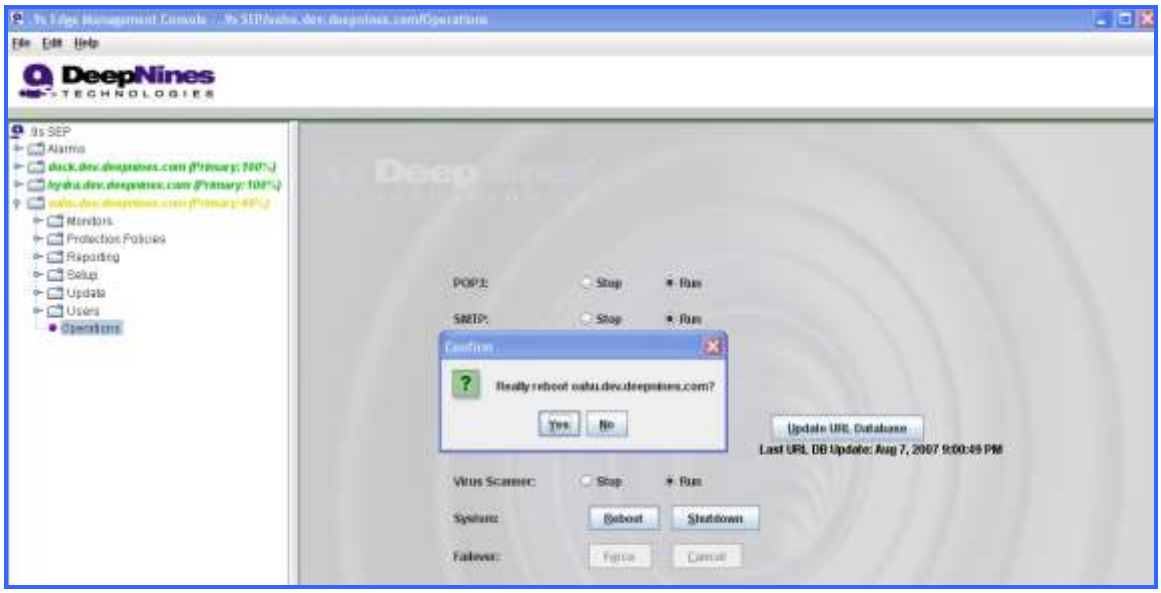


Figure 6-57. Reboot The SEP System

6.7.7.2 Shutting Down SEP

Although the Security Edge Platform is designed to run continuously, there may be times when you need to shutdown the system, perhaps to relocate it. The System: Shutdown command brings the system down gracefully.

NOTE

Networks with High Availability configurations, shutting down the primary SEP unit causes managed fail-over and the alternate unit assumes responsibility for managing traffic. As long as the primary unit remains in good health, shutting down the alternate unit has no effect on traffic flow.

NOTE

To maintain accurately mirrored configurations, both primary and alternate SEP units must be running when configuration changes are made.

If only a single SEP unit is installed, traffic flow is halted when the system shuts down.

To shut down the SEP unit:

1. Verify that you are logged in to the platform to be shut down and that it is the active host. Use the System Resources tab in the Command Explorer to view information pertaining to the status of the currently connected SEP.
2. Select System: Shutdown from the Operation panel (Figure 6-58).
3. Click **<Yes>** to confirm your actions.

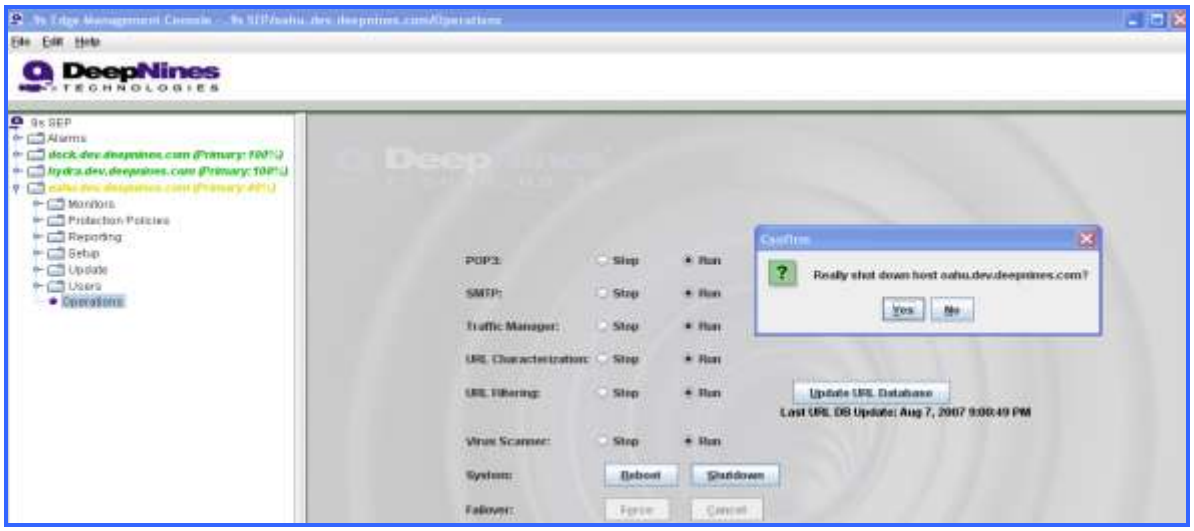


Figure 6-58. Shut Down the SEP System

NOTE

If a Fail to Wire card exists, rebooting the system will also not stop traffic.

Technical Support/Additional Resources

7

7.1 Support Numbers

Personalized Support for Critical Operations

ATC offers around-the-clock, personalized, proactive and skilled support from an assigned technical support engineer who is familiar with your Deepnines product deployment and support history.

- Contact by Telephone at 1-866-DEEP9-12 (866-333-7912)
- Contact by Email at tso@Deepnines.com

7.2 Online Support

Visit www.deepnines.com to download and/or view documents and datasheets that can assist you with deployment scenarios, offer troubleshooting tips and product management features.

7.3 Training Classes

Deepnines offers training courses that cover various aspects and technical features typically not covered in the basic SEP training course. This expert training covers advance troubleshooting techniques and granular tuning of the Security Edge Platform. To take advantage of this expert training or to request more information, contact Deepnines via Email at: tso@Deepnines.com.

Appendix

A

A.0 DPI Rules

Deep Packet Inspection provides another layer of inspection for a variety of intrusions. Deep Packet Inspections is disabled on each flow specifier by default. You have the option to enable it for each flow control. Once enabled, you can disable it again if needed.

A.1 DPI Rule Writing

Before using the Deepnines Deep Packet Inspection engine, a short tutorial on the rules and how they work along with a short brief on the structure of the rules will help you use the DPI solution to its highest potential.

A.1.1 Rule Headers

Rule headers can be divided into four main categories:

Rule Action	The action to take upon matching the signature rule
Protocol	The type of protocol, i.e., TCP, UDP, etc.
Source Information	Where the packets are coming from.
Destination Information	Where the packets are going to.

Table A-1. Rule Headers

A.1.1.1 Matching Ports

The Deep Packet inspection rules can be matched to specific ports. The rule can include a source port, destination port, or both.

```
alert udp any 19 <> any 7 (msg:"DOS Msg"; reference:cve,
CAN-1999; classtype…..
```

When the engine sees UDP packets going from any IP address to any other IP address from port 19 to port 7.

A.1.1.2 Matching Simple Strings

Below is a simple example of string matching. Below the signature is looking for wwwboard password rule:

```
Alert tcp $EXTERNAL_NET any -> $HTTP_SERVERS $HTTP_PORTS (msg:"WEB-CGI
/wwwboard/passwd.txt access"; flow:to_server,established;
uricontent:"/wwwboard/passwd.txt"; nocase; reference:arachnids,463;
reference:cve,CVE-1999-0953; reference:nessus,10321;
reference:bugtraq,649;classtype:attempted-recon; sid:807; rev:7;)
```

This is a network reconnaissance attack. By checking for the presence of a password file in a default location, the attacker can crack the file (if present) and try to use the same password elsewhere on your network, potentially gaining authentication credentials that attacker should not possess.

How do we detect this type of attack? Viewing the source and destination ports isn't going to help us much. Most Web Traffic is going to flow over a number of defined HTTP ports; usually 80,8080, and 443. The source port is most often a high randomly selected port; therefore viewing the content of the packet is the best method. With the string matching content, you can select only traffic that matches the simple string "/wwwboard/passwd.txt". This will be in the HTTP request of almost anyone attempting this type of attack.

A.2 Update Methods

A.2.1 Oink Code

Signature updates can be obtained directly from the open source community. By registering at snort.org and obtaining an oink code, one can get the latest rules from the community.

A.2.2 VRT

VRT rules are the latest tested rules that can be obtained. There is an annual fee associated with this service. More information can be obtained through Deepnines Technical Support on this service and associated fees.

A.2.3 Deepnines Website

Deepnines Technical Services researches and develops new rules that will stop a number of threats or unwanted behavior and will release those on the website. Additionally, Deepnines Technical Services will send out email alerts on the new available rules and how they can be obtain for current customers.

A.2.4 DPI Actions

DPI categories can be globally enabled or disabled along with altering the logging of enabled categories.

To ignore, enable, enable with logging, or logging only on signature categories:

1. Select Deep Packet Inspection - Actions from the Protection Policies folder. Signature category classifications are listed and described in Table A-1.

Drop Silently	Signature is enabled, but no logging of the triggered signature is written to disk. Alert will be seen in the reporting database.
Drop With Log	Signature classification is enabled and signature logging is enabled. Alert will be seen in the reporting database.
Log Only	Signature blocking is disabled but event is still written to the logs. Alert will be seen in the reporting database.
Ignore	Ignores the classification completely with no logging of signature events. Alert will not be visible in the reporting database

Table A-1. Signature Category Classifications

If the administrator is going to be looking for a specific attack within the log files, the Action setting will need to be set to "Drop With Log", otherwise Deepnines recommends that DPI Actions be set to "Drop Silently" when blocking is desired. This will allow the administrator to still view the alert in the reports and assist in conserving processing capabilities.

A.3 DPI Rules Selection

DPI Rules selection contains general groups of rules associated by type. If expanded individual rules will be visible and can be selected/deselected as desired. Additionally, if the entire group is unwanted merely unselecting the check box associated with that group of rules will disable all rules in that group.

To view active/inactive rules or to select/deselect rule groups:

1. Select Deep Packet Inspection – Rules Selection from the Protection Policies folder.
2. Signature groups are listed in the main panel.
3. Click on ⊞ to expand that particular group of rules.
4. Check or uncheck the desired rule.
5. Click **<Save>** to save the results or click **<Reset>** to cancel the changes.

A.4 DPI Custom Rules (User Defined Rules)

Deepnines has built the user interface in such a way to allow administrators to build custom rules or import groups of new rules that are desired. DPI custom rules can be built and added from existing rules as well. Below will explain this section further.

To view, modify or add new custom rules:

1. Select Deep Packet Inspection – User Defined Rules from the Protection Policies folder (Figure A-1).

   For single rule addition or modification:

2. Single Tab is selected in the Explorer Pane.
3. Click **<New>** to add a new rule.
4. To modify an existing User Defined Rule, highlight that rules by clicking on it in the Explorer Pane (top of the page).
5. Make modifications to the rule in the Rule box.
6. Click **<Save>** to save the changes or click **<Reset>** to reverse the changes.

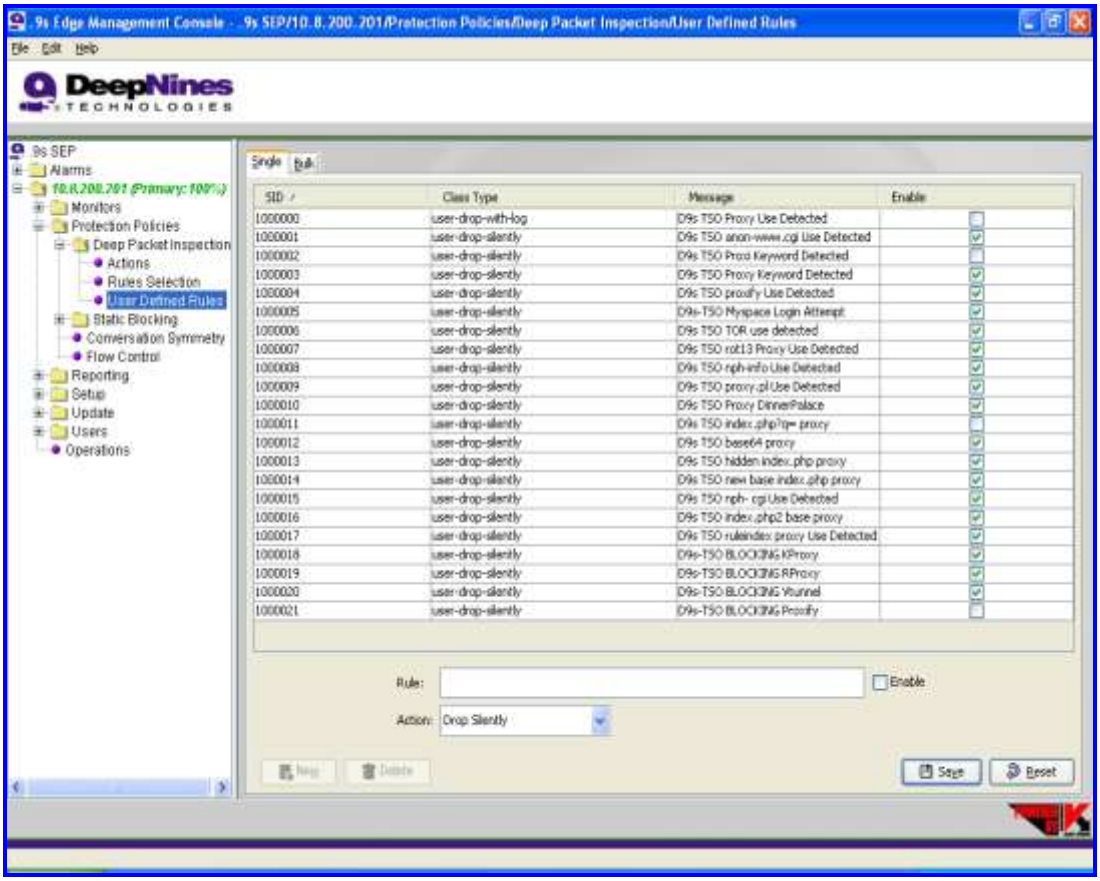


Figure A-1. DPI User Defined Rules Screen - Single Tab

NOTE

If minor modifications are desired or if additional rules are wanted with slightly different content, highlight the entire rule in the Rule box, right click with your mouse, select copy. Click <NEW> (bottom left) and then paste the rule into the Rule box. Make modifications, click <Enable> and then click <Save>.

For bulk or multiple rule import from a text file, select the Bulk tab from the Explorer Pane (Figure A-2).

1. Select import button (bottom left). A window will pop up asking you to find the location of the text file you wish to import.
2. Find the desired text file.
3. Click **<Open>** from the pop up window once the desired file is located. The file contents will then be displayed in the Bulk explorer pane.
4. Review the contents or that the new rules to be imported are correct and then click **<Save>**. The newly imported Bulk rules will now be visible in the Single tab as individual User Defined Rules and can be Selected or Deselected as wanted.

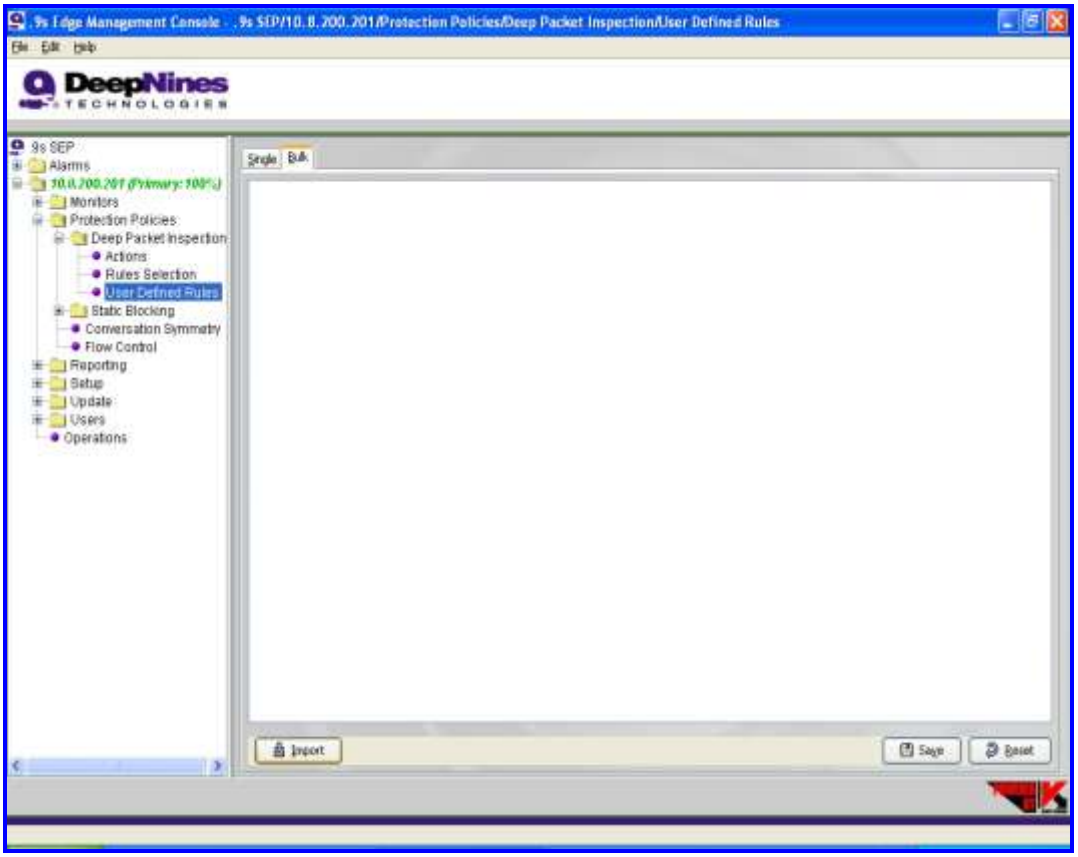


Figure A-2. DPI User Defined Rules Screen - Bulk Tab

Newly imported Bulk rules will automatically be enabled for DPI scanning. Single or individual defined rules will have to be enabled at the time of creation or after they have been saved.

Glossary

G

ADAPTIVE RATE CONTROL	You can configure this setting in Traffic Manager to control the rate of malicious traffic coming into the SEP.
ARP	Address Resolution Protocol (ARP) is a protocol for mapping an Internet Protocol address (IP address) to a physical machine address that is recognized in the local network.
AV	Anti-Virus
BRIDGE	A Bridge connects two interfaces together so that traffic can pass through it.
CGI	Common Gateway Interface (CGI) is a standard for interfacing external applications with information servers, such as HTTP or Web servers.
CONVERSION SYMMETRY	Conversation Symmetry allows the SEP to provide protection or state-like measures on connectionless traffic. It is designed to insure proper 2-way traffic by controlling the number of requests and responses assigned to a specific protocol.
CPU	Central Processing Unit. Sometimes referred to simply as the processor or central processor, the CPU is where most calculations take place.
DMZ	In computer networking, DMZ is a firewall configuration for securing local area networks (LANs).
DPI – Deep Packet Inspection	As part of “Protection Policies”, Deep Packet Inspection provides another layer of inspection for a variety of intrusions.
EDGE	The Edge device is a SEP device that is placed outside or in front of your router, taking the connection from your ISP.
EDGEFORENSIX	The EdgeForensiX (EFX) system can be used to store forensic information in the Postgresql database for historical analysis.
EFX	See EdgeForensiX
FLOW TAGS	A Flowtag is a relatively short identifier that can be added to the flow status information for a conversation (protocol session between a pair of hosts).
FLOWSPECS	A flow specification (or "flow spec") is a data structure used by internetwork hosts to request special services of the internetwork, often guarantees about how the internetwork will handle some of the hosts' traffic.
FRONTLINE	The Frontline device is a SEP device used for LAN deployments on Ethernet or Gigabit Fiber connections.
HTTP	Hypertext Transfer Protocol (HTTP) is a communications protocol used to transfer or convey information on the World Wide Web.
ICMP	Internet Control Message Protocol, an extension to the Internet Protocol (IP) defined by RFC 792. ICMP supports packets containing error, control, and informational messages. The PING command, for example, uses ICMP to test an Internet connection.

KGH	(Good Known Hosts). A table containing all the good known hosts that are available on the system.
MIRROR CONTROL	Control function settings for the High Availability.
MIRROR HOST	Control function settings for the High Availability.
P2P	A peer-to-peer (or "P2P") computer network exploits diverse connectivity between participants in a network and the cumulative bandwidth of network participants rather than conventional centralized resources where a relatively low number of servers provide the core value to a service or application.
POP3	Post Office Protocol version 3 (POP3) is the de facto standard for email transmissions across the Internet using TCP/IP connections
RARP	Reverse Address Resolution Protocol (RARP) is a network layer protocol used to obtain an IP address for a given hardware address (such as an Ethernet address).
SEP	The Security Edge Platform (SEP) is a unified threat management (UTM) appliance that is deployed in front of the router or at critical points in the network architecture and acts as the first line of defense for the network.
SMTP	Simple Mail Transfer Protocol (SMTP) is the de facto standard for email transmissions across the Internet using TCP/IP connections
STATIC BLOCKING	As part of “Protection Policies”, Static Blocking provides built-in blocking for known traffic anomalies.
TOP TALKERS	The Top Talkers Report is a snapshot representing which conversations or flows are using most of the bandwidth.
TRAFFIC MANAGER	The SEP Traffic Manager contains variables that are set by Deepnines Research and Development for optimal performance.
UTP/IPS	Unified Threat Protection/Intrusion Prevention System. UTP protects against multiples attack types. IPS prevents attacks rather than detecting.
VLAN	Virtual LAN, commonly known as a vLAN or as a VLAN, is a method of creating independent logical networks within a physical network.
VRT RULES	VRT rules are the latest tested rules that can be obtained. There is an annual fee associated with this service.